Telematics for community portal development.

Thesis

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Telematics for Community Portal Development

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Telematics for Community Portal Development

Abstract

Community portals emanate from information and communication technology (ICT) applied to community networking, enabling citizens to access information and services on-line. These telematic portal systems are now deployed globally, facilitating information services to geographic and virtual communities.

The context of this research study is one of community portals deployed by UK government local authorities for citizen service interactions. To date there have been few studies that holistically and longitudinally examine the subject of community portals. The 5 year research exercise has been undertaken as a qualitative study using an interpretivist approach and methodology derived from context-process analysis. The approach was influenced by Mumford's writings on *'people and technology'*, and Schuler's early work on community network development in the USA.

Data collection was undertaken using a national survey questionnaire and qualitative techniques including interviews and mini-case studies.

Findings of the research include a new categorisation of community portals into two distinctive types of Civic and Civil portal.

Theoretical outcomes include an improved understanding of the methodological, technical, and social dimensions of portal development and deployment. The implications for management include an exposition of the issues involved in community portal development and the important need for citizen engagement in the process.

A case study of Blackpool, (and mini case studies of five civic / civil portals), point to lack of collaboration between central and local government portal architects and developers.

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If it be not now, yet it will come – the readiness is all.

(Hamlet, Shakespeare)

Telematics in the context of Community Portals

1. Chapter One: Introduction, Aims and Objectives.

1.1 Introduction

Community portals emerged in the mid 1990's and developed in a number of distinct types. This chapter provides an overview of the research and the context for this study. Central to the work described is the extension of community networking to the relatively recent deployment of electronic community portals to support information interchange within communities, and citizen interaction with government services in the UK. The chapter introduces the aims, objectives, research questions and organisation of the thesis.

This research dissertation originated from the perspective of a technology inquiry, yet necessarily developed to engage the whole process of planning and implementing a *Community/Civic/Civil* portal, and the wider social issues.

The context is community portals solutions in UK government departments, with awareness of the global deployment of similar portal systems. Originating from a technological perspective the research necessarily embraces the wider perspective of citizen requirements as portal users. During the lifespan of the research exercise two distinctive and distinguishing characteristics have emerged:

1. A categorisation of ***Civil*** *portals* describing those instances developed by activists within a community network, owned and operated by a sub-regional

geographic neighbourhood group, (i.e. non-governmental organisation). The term *Civic portal* has evolved as a term for government sponsored portals (either national, regional, or local government) within the scope of what is generally referred to as a civic network. Although the term ***Civil** portal* and ***Civic** portal* now have recently different connotations, within this dissertation the term *community portal* is generically used to capture and embrace both *Civil* and *Civic portals* that are semantically different. Although each possesses different functionality (especially in integration of office systems), they holistically present similar needs for whole system consideration of People and Technology issues. During the lifespan of this exercise a number of *Civil portals* have become unsustainable and ceased to exist in their original form (e.g. Craignet, Edinburgh) whereas civic networks/portals are found to be increasing and becoming embedded in the overall structure of government service delivery.

2. The term ***community informatics*** has emerged over the past six years (2000-2006) as the acknowledged discipline around and within which community networking initiatives are being categorised and developed from the academic perspective. This new discipline generally has its roots in the social science community, but embraces the wider eclectic mix of technologists from the computing and communications field that are essential for consideration of community network development.

Against this background it was expected that the research exercise would be one of embarking on a voyage into the technology facets of portal systems, but a review point occurred early in the research exercise, where it was recognised that the community portal system comprised of conventional technology modules as building blocks throughout the infrastructure, middleware, business logic, and presentation rendering layers. The review

led to a departure into the arena of *people and technology*, to research the supportive systems that aggregate into the whole system requirements for planning and deployment of a *Civil / Civic* portal development. This change was initially discomforting, as this was new and previously unknown territory, but it was felt necessary in order to gain a holistic understanding and contextualisation of the breadth of requirements for any portal system. The decision has been justified by the outcomes and beneficial findings that have helped to give a broader understanding, in particular the socio-technological nature of a community portal development. This has altered the original emphasis on a technology biased research study of telematic portal solutions, straddling the information systems and social science disciplines to gain insight and understanding of the citizen needs, and how they can be delivered as telematic portal services.

The outcomes of this research are now widely relevant to all portal development, and serve both government and non-government sponsored portal development in the public sector domain, both in the UK and globally. Joining *people* issues with the *technology* issues has been significant and influential in getting the whole picture for portal development.

Community Portals (CP) developed by local and regional government departments (i.e. Civic) are in an early stage of development, having only emerged through technology advances in the past decade. They exist to facilitate citizen access to information and services through new technology 'channels' (Cabinet Office, 2001). A general overview of the early adopter

portal sites (SOCITM, 2003) reveals a heterogeneous range of content and service provision, and an eclectic mix of functionality. This wider view extended the scope of the thesis research to explore the development of community portal technology and the influence of social and technological forces.

1.1.1 Research Background

The thesis examines the extent to which the roles of *'people'* and *'technology'* (Mumford 1997, 2003) are entwined; adding a contribution to knowledge on *telematics in the context of community portals* - supported at local levels within the UK, and mediated through political local authorities. The study has been undertaken over a period of five years from 1999-2005.

The thesis draws upon:

- theoretical perspectives of community networking (CN) requirements;
- articulation of information & communication technology (ICT) and content developers in the design of functionality of community portal technology, and
- people and technology issues and the way they exert influence on the deployment of community portals as socio-technological systems.

The thesis observes that access to information and services through on-line interactive service channels has a variety of characteristics, and that the social context of community portal services is central to the successful

operation of electronic community networks (Schuler, 1996). The ways in which a global Information society (Toffler, 1980, Milner, 2002) and the rise of a knowledge economy (Milner, 2002) enable new *'virtual communities'* (Rheingold, 1993, 1995, 2000) points to a re-thinking of the nature of service access and citizen interaction with services (Phillis, 2004). This leads to recognition that new forms of citizen interaction with government services are required, with on-line transactional capability. A series of drivers exist including *'increased communication of local information'* (CITU, 2000 p 20), but the primary force recently driving local authorities to develop a web presence and portal service is the eGov initiative (CITU, 2000, p22).

The concept of eGov is widespread around the globe, emerging in the UK at the policy level from the Labour Government in Britain after its election in 1997. It has resonance with the Information Society initiatives, as well as the growing literature on the 'creative economy' (Howkins, 2002) and how it links to the 'knowledge economy' (Leadbetter 1999). The implementation of eGov in the UK over the past 8 years has now become the main driver of local authority development of on-line citizen service channels for interaction with government departments.

1.1.2 Research Aims, Objectives, and Questions

The principal enquiry to be addressed is – do community portals have more to offer users of government-citizen services, and citizen-citizen interactions than their technological novelty? This can be viewed as a choice between two

alternative propositions. The first is based on an assumption that a community portal merely offers an electronic alternative to citizen access to information and content that exists elsewhere in alternative media e.g. paper-based. The second is that community portals do, (or have the potential to), provide novel approaches to procedural or institutional interactions between citizens and government that are capable of giving transformational change in citizen access to government services, e.g. self-service, 24 hour interactive service capability, etc.

Deciding between these alternatives involves assessing claims that have been offered about the meaning and significance of community portals to local authorities, and the citizens they serve, as well as analysing how the 'enabling' or 'enhancing' possibilities of community portal technology might support the latter of these two alternatives. Answering the principal enquiry involves framing further research questions and developing an instrument to probe the existence and capability of community portals in the United Kingdom.

1.1.3 Aims and Objectives

The aims of this thesis are:

- To identify exemplars of good practice in community portal development.
- To evaluate the provision of services and content in the current range of UK government community portals.

- To understand the motivation for development and deployment of community portal technology.
- To investigate the social, political, and people issues impacting on community portal development.

To address the research aims a set of objectives were formulated, including:

- A review of current literature on the use of community portals in UK government bodies, e.g. local, metropolitan, regional, and national government departments.
- A review of all British local authorities to assess the capabilities of existing community portals.
- A theoretical evaluation of community portal development to identify gaps and inequalities of service provision.
- A specialist case study to identify key attributes of a community portal presence.
- An evaluation of the findings.

1.1.4 Research Questions

The key exploratory research questions informing the research are:

1. What makes a first class community portal?

2. What are the elements, characteristics, functional attributes, and emergent properties that constitute an effective 'portal' for e-community development?

3. What telematic technologies and systems are best suited to 'portal' delivery?

4. How do these telematic systems interact for seamless 'portal' operation?

5. What is the potential for telematic systems to support community regeneration via portals?

6. What are the social, political, and people issues involved in the process of community portal development?

1.2 Organisation of the Thesis

The research objectives are specified in Chapter 1.

Chapter 2 surveys the literature related to portals, community portals, and telematic systems in the context of those produced as citizen gateways for access to government services, and in the wider context of the community networking initiatives and developments.

Chapter 3 outlines several theoretical concepts that are perceived to be of value in explaining the uptake of community portals by government departments. Within the information systems field a number of research approaches are legitimate. In ontological and epistemological terms, a wide variety of assumptions are acceptable, but the norm is to distinguish between positivist and interpretative positions. Because of the focus on the 'people' issues and the social aspect of community portal development this research adopts an interpretative stance. This choice is consistent with the theoretical frameworks addressed in Chapter 3 (context-process analysis), and with the data collection and generalising to theory approach. Rather than follow inappropriate positivist criteria for evaluating the research (e.g. statistical rigour, validating, and generalisability), an alternative set of evaluation criteria are adopted from recent literature, in the form of context-process analysis.

Chapter 4 presents the research methodology, including the design and dissemination of a national postal questionnaire, and follow-up interviews. Analysis of the results and subsequent selection of a case study follows, along with justification for the selection of context-process analysis to consider the findings within the interpretivist paradigm. Arguments about community portals as social technologies are hard to prove or disprove, as they tend to rely upon the capacity of theorists to link current community networking developments to broader accounts of social and cultural change. The problem is addressed by considering community portals as applications of social technologies, drawing attention both to changes associated with

community network development and to the social and cultural continuities that contextualise their development.

Chapter 5 presents the findings from the Community Portals (UK) 2002 Study. Information from a postal survey questionnaire is used to identify the capability of local government portals in a UK context.

Chapter 6 outlines the single case study approach; explains the selection of Blackpool as an illustration of 'advanced strategy' in the development of a community portal; and drawing on earlier examples that can be found elsewhere in the UK, and in cities and regions of many countries around the world.

Two forms of interpretive research are employed: action research, and the interpretive case study. Participatory action research requires heavy involvement in the research situation, with the opportunity of good learning, but at the potential cost of objectivity. Conflicts can arise because of the difficulties in satisfying two audiences with different needs: the subjects under research, and the research community. Rigorous reflective thinking and good documentation of the research process are required to overcome these difficulties. The interpretive case study approach involves the collection of qualitative data, resulting in thick description, often written in a chronological, story-telling fashion (features which are also common in action research). Often there is an explicit theoretical position that is used to interpret the data, and these interpretations may be used to develop further theory. An action

research case study of information systems in Blackpool's CommunityWise development has been undertaken using context-process methodology. The case study was then re-interpreted using structuration theory to provide new insights as an interpretive case study. The case study is informed by the results of the earlier questionnaire survey. Interview statements and primary/secondary research resources are used to substantiate the case study evidence and conclusions. The chapter documents the details of Blackpool Borough Councils strategic approach to development of a community portal to support interactive on-line transactional services for citizens.

Chapter 7 is a contextualisation and appraisal of the research findings against the literature review and synthesis of the theoretical background developed prior to the national survey, case study selection, and final case study.

The concluding Chapter 8 addresses lessons learned and gives recommendations for those government departments pursuing the development of a community portal through deployment of telematic systems. This final chapter summarises the contribution to knowledge of this work and closes the work of this thesis.

1.3 Chapter Summary

This introductory chapter has served to outline the thesis as it is presented in the forthcoming chapters, and to identify the aims and objectives of this

research. Chapter 2 presents a review of current literature that has a specific focus on the role of community portals deployed through activities of local authorities in the UK within the eGov initiative.

2. Chapter Two: Literature Review

Community Portals and the Civil / Civic Networks

2.1 Introduction

This chapter reviews the body of material associated with virtual communities, community networks, and specifically details the emergence, characteristics, and context of community portals.

Literature from different disciplines has been consulted, in particular:

- social science,
- information science & systems, as well as
- telematic technology.

The social science domain has been used in determining and understanding the holistic requirements of community networking, the trends and issues of community portals, and the role of 'people and technology'. The chapter is organised in 5 sections, enabling review of:

- virtual communities,
- portal types,
- social impact,
- technology, and its constraints,
- information systems and integration needs.

Academic literature surrounding community networks, and in particular community informatics, has assisted an examination of the potential impact on the information systems relevant to community portals and their deployment.

At the outset it was envisaged that the research exercise would investigate the deployment of technology, in order to gain insight into the technical attributes that distinguish the various approaches to design and development. However, the early stages of literature review led to re-consideration, review, and widening of focus as it became apparent that the research agenda required more than a technology study if the characteristics of community portals were to be understood. In particular, the linkage of *'people and technology'* (Mumford, 1997) was necessary to identify the needs of citizens as users, and consider the match between user needs and the community portal designs currently deployed. This wider view extended the scope of the thesis research, exploring the development of community portal technology and the influence of social and technological forces.

Community portal requirements closely shadow the functional requirements in the corporate sector of enterprise information portals (EIP), and this research analyses the attributes and relevance of EIP research to the topic of community portals, to establish a benchmarking position. Grid technologies and distributed computing infrastructure in the Science and Engineering Research Community (SERC) are also reviewed to determine their relevance to the evolution of community portals.

Literature on community portals from Doctor, Ankem and O'Neill (Doctor & Ankem, 1996; O'Neil, 2002) has been used to classify the characteristics and attributes of community portals, and determine frameworks for categorisation of portal attributes and their effects. A review of the range of communication technologies available to teams engaging in the development of community portals is used to identify constraints and gaps in technological capability.

Two major bodies of literature are identifiable regarding community portal development. The first deals more generally with community networking in the wider context, emphasising a need to consider issues beyond the technology. This literature is quite extensive and reflects the importance of this area, and the relative maturity of community informatics compared with the newer subject of community portals. The second, and much smaller body of literature deals with community portals, giving analysis and modelling of international case study examples, notably in the USA, e.g. Blacksburg Virginia (Cohill & Kavanaugh, 1997). This literature is smaller because community portal technology has really only existed in its recognisable current form for the past six years, and as such community portals remain an underdeveloped research area. The literature reveals gaps in capability, between the commercial models for software available in the enterprise portal market, and those deployed by local authorities in the UK, particularly in lack of interactive service capability.

The material has been assimilated to inform the case study and establish a benchmarking position. The contextualisation given here provides a backcloth

against which community portal development by UK government departments can be considered. The chapter therefore positions the topic of community portals in the wider context of community networking and presents an overview of the topical academic material relevant to this study.

This chapter identifies the shortcomings of an analysis based solely on technological determinism and to the important need to understand the business case drivers. The case for a wider analysis of the social, cultural and political dimensions is argued – thereby justifying the linking of three strands of social, technology, and information systems domains as inexorably intertwined in analysis of community portal requirements.

2.1.1 Civil / Civic Society Networks

Civil Society is the newly recognised constituency arising through the mediation of new communication technologies that enable new groupings to form, and as a necessary response to the centralisation of power in existing governmental and business structures that arises as a result of the same technologies (Bytheway, 2005). Much has been written about the goals and implementation of community networks (Carroll and Rosson, 1996; Cohill and Kavanaugh, 1997; Keenan and Trotter, 1999; Cowan et. al., 1998), but objective evaluations are relatively new. Significant research efforts include:

- Gregson and Ford (1998) reviewed 14 published evaluations of community networks (including the goal and mission statements of 84 web-based community networks), and found that no core set of goals applied across

all of them, making it difficult to develop general goal-based evaluation measures (Gregson and Ford, 1998).

- Patrick (Patrick A.S., 1996) conducted a study of the subjective measures of use and importance from the National Capital FreeNet (NCF) in Canada and found that communications services (e-mail and public discussions) are the main use of the system while information services are secondary services both in use and importance (Patrick, 1996). Patrick and Black (1997) also conducted a survey of FreeNet users to find their demographic characteristics, access methods, and levels of satisfaction with the system. They found:
    - NCF users to not be a specialised group in the community;
    - that they were satisfied with the NCF system; and,
    - many had purchased new technology to access the system (Patrick and Black, 1997; Patrick, Black, and Whalen, 1995).
- Beamish (1995) stresses how the newness of community networks makes them difficult to evaluate, "yet it is appropriate to monitor their progress towards the goals". She differentiates between short-term community network goals (sustainability and growth) and long-term goals (access, public discussions and democratic participation, and community development). She recommends that community networks be measured against the direction and speed of moving toward their goals, rather than the goal itself, using a formative (on-going) evaluation process. She stresses the need for evaluations to be expressed in terms of actions that implementers can take (Beamish, 1995).

- Tonn et al (2000) review 40 community networks to find what types of information each provides and how the network may strengthen the social capital (Doody, 2004) in the community it serves. The study found that most community networks run by not-for-profit groupings are simply web portals to other websites in the community, and exhibit few characteristics associated with interactive services for citizens (Tonn, Zambrano, and Moore, 2000).

From the above it can be seen that although every community network and community portal is unique, (in particular because they are developed by local authorities and organisations that are themselves disparate in nature). Community portals in the context of UK local government *(Civic Portals)* share at least three basic characteristics (in addition to the basics of providing community information and a means to communicate electronically) that distinguish them from other types of commercial portal system. The characteristics include:

- local focus;
- access; and,
- social change / community development.

Local focus: The most distinguishing characteristic of community networks is their focus on local issues. They emphasise local culture, local relevance, local pride, and community ownership (Morino, 1994). Examples of the type of information and services that can be found on these systems are timetables for local and regional public transport; local adult education courses;

employment opportunities; local council services information; social services information; local events calendars; entertainment listings (theatre/cinema); restaurant listings; private sector services (plumbers, electricians, etc.). In addition to information services, community portals provide forums for residents to discuss local issues.

Access: A second feature distinguishing community network portals is their concern and effort to ensure that the network reflects and includes all members of the community, and not just traditional computer and telecommunication users. This means that community networks are frequently involved in placing computer equipment in publicly accessible places such as community centres and libraries, e.g. UK On-line centres, to enable public access to the community portal resources.

Social Change/Community Development: Community network portals' *(Civil Portals)* third characteristic is a belief that the system with its communication and information can strengthen, vitalise, and re-generate existing communities. Community networks are frequently seen by their organisers as a tool – not very different from tools such as printers, photocopiers, telephones, radio or television, that have been used for community organising in the past. It is believed that community networks can be used by the local community to find and build solutions to their problems (Guthrie et al., 1990; Morino, 1994).

Because community network portals are intended to serve the community, each will reflect the particular interests and needs of the individual place, but most networks have three principal functions:

- to increase communication between the residents, and between residents and local/central government, and institutions; and
- to facilitate the provision and exchange of local information.
- to link citizens to services. e.g. local/central government, and private sector/business.

The evaluation of outcome findings in Chapter 7 will extend these parameters to identify discrete categories of Civic, Civil, and Corporate portals.

Portals deployed by government organisations are categorised as Civic portals. Conversely, those supported and sponsored by non-government organisations are categorised as Civil portals.

2.1.2 Emergence of Virtual Communities and a Network Society

New forms of social grouping are appearing as the 'virtual community'. The most elementary defining characteristic of a 'virtual community' is that its members meet and interact through the use of computer-mediated communications (Steinmueller, 2002).

The invention of the term 'virtual community' is often attributed to Howard Rheingold (Rheingold 1994, 2000). Early work on virtual communities emphasises the extent to which networked media enable forms of community to emerge that transcend geographical barriers. With the development of the

internet in the 1990's and particularly with the development of on-line discussion lists and newsgroups, a number of Internet theorists and activist-entrepreneurs (Hauben and Hauben, 1997) saw the possibility that new forms of on-line community were emerging.

The minimalist definition of virtual communities as voluntary social associations based on computer-mediated inter-personal communication (Steinmueller, 2002) encompasses the possibility that some of these communications will lead to close personal ties, and that some of these relationships may be further developed through physical meeting. Other groupings of like-minded individuals merely cluster as 'birds of a feather' forums. (Mansell, 2002. p36). Virtual communities attract people with common interests who engage in voluntary association. These members of communities distribute messages; share their knowledge; and offer mutual support within their common interest groupings. Their activities have been positively facilitated through the improvement in telematic systems.

The rapid emergence of electronic communications and information technology has led to access issues and themes of inequality and fragmentation are commonly referred to in discussions concerning the "information society". Key themes around the information society include Alvin Toffler's (1980) well known "third wave" concept, as perhaps the clearest example of the idea. Manuel Castells (1996, 2000) uses the term 'network society' to describe this concept of networking – based upon the internet. He defines a network as:

> "a set of interconnected nodes through which communication flows occur, and are open, flexible and adaptable forms able to expand without limits, as long as communication codes are shared within the network".
>
> (Flew, 2004 p24.)

While networks are a longstanding form of social organisation, they have been transformed by the emergence of 'new media' (Flew, 2004) to enable on-line communication

Community portals now provide the enabling technology to facilitate on-line networked access for 'virtual communities', through networked computers.

2.1.3 Main Drivers of e-Government

In 'reinventing government' Osborne and Gaebler (1992) introduce goals and components of reform for public sector services. Heeks (1999) identifies a significant gap in Osborne and Gaebler's analysis in that they make virtually no mention of information technology. Heeks continues to analyse what reform means in the developing information age and this is discussed in the analysis in Chapter 7.

Predictions of wide-ranging social change through a global transition to what is variously called information capitalism (Castells, 1996), the 'information economy' (Shapiro and Leone, 1999), the 'digital economy' (Margherio et al.,

1998), the 'weightless economy' (Quah, 1997), or simply the 'new economy' (Kelly, 1998). Schuler (2005) extends this to introduce the concept of community intelligence, using this term to describe the capability that organisations and society use to find solutions to environmental and other challenges collectively. This combines Putnam's (1995) *bonding social capital*, with civic *bridging social capital*.

Steinmueller has shown that virtual communities and community networks (and hence the community portal) attract people with common interests who engage in voluntary association (Steinmueller, 2002). However, in this work, he focuses mainly on the social processes that give rise to procedural and institutional authority in these communities.

The role of government in information delivery to communities and the citizen is not unique to the United Kingdom, originating from initiatives in the United States, and now in widespread use around the globe.

2.1.4 The e.Gov Context

In these first years of the twenty-first century, governments around the world are actively preparing for e-Government (Gianforte, 2001).
Websites have been created for many government programmes (e.g. United States www.egov.gov) (accessed Feb 2002), and the push is on for broader and more easily navigated portals. Mechling (2002) offers a model on initial

progress on e.government to show that it follows a predictable pattern, where the early applications have been decidedly incremental.

Heeks and Bhatnagar (1999) identify key factors that contribute to success and failure of information age reform. Gaps between reform concepts and organisational realities are identified as causal features of failure.

Heeks (1999) findings align with the research findings of this thesis on the state of the development of community portals as "a false dawn" (Musgrave, 2005), due to gaps between visionary concept, organisational capability, and the limited functionality of these first generation community portal offerings.

eGov strategy in the UK has objectives that include multiple channels of service delivery (Cabinet Office, 2001) enabling those who choose to retain personal contact with government departments at a 'walk up to' counter for personal service will have that option, but for others who choose on-line access then e-Service usage will increasingly enable access to government information and transactional services on a self-service basis. Integrated service delivery through a single point internet portal has become increasingly popular. Governments around the world are using portals to give their web presence a focal point, funnelling citizens through a single site before directing them to information and services delivered by different departments. However, portals offer more than an access gateway to government services. They give an opportunity to structure services around the needs of the citizen, enabling citizens to find information and services in intuitive and convenient

ways. For example, rather than placing applications for birth certificates under the government registrars department, citizens could find the application on a web page that integrates all birth-related government services together. This is the approach adopted in the re-modelling of the UK online portal that bases services around life events – 'birth, marriage, etc. (National Audit Office, 2002).

Using many different strategies, government portals around the world have focused on integrating services in intuitive ways. Singapore's "e-Citizen" portal (www.ecitizen.gov.sg) (accessed March 2005) is organised around life events such as changing careers or retiring. Virginia launched "My Virginia" (www.vipnet.org/cmsportal/) (accessed March 2005) to allow citizens to personalise and control information and the delivery channels. Also, in the USA - Washington State citizens use a sophisticated search engine called "Ask George" (www.access.wa.gov) (accessed March 2005) that enables them to search all government websites at the same time, using plain language questions such as "How can I get a fishing permit?" (similar to Ask Jeeves). The Canadian government's portal continuously updates a "Top Ten" list of services used by identifiable groups such as businesses and non-Canadians. Other similar portals exist in continents and countries across the globe, Australia, Africa, etc.

The global nature of eGov is emphasised by Hurley and Mayer-Schönberger (2000), giving examples of implementation on all continents. Heeks (1999) argues the synonymity between eGov and public sector reform, and describes

the way in which information age reform is spreading throughout governments worldwide. Examples of implementation of eGov programmes in countries across the globe are listed at www.egov.it. (accessed May 2005).

2.2 Community Portals

The community portal term is wide in scope and lacking in tight definition. Findings in this research exercise indicate two discrete sub-types of portal are identifiable: *Civic* portal, and *Civil* portal. From a technical perspective a portal provides a solution for aggregation of content and personalisation of presentation to the user. Typically, a portal has an integrated user interface and a single sign-on (SSO) approach for security. Portals have two major technical components designed in parallel: application architecture and information architecture. Both of these extend from business requirements, and they require an integrated approach (Linwood and Minter, 2004, p2).

2.2.1 Electronic Portals

Portals and electronic portal technology have developed in the context of Internet access since around 1998, acting as gateway access points for community information. Paradoxically the portal tries to keep the user within the site by building dependencies rather than directing them on to others.

A feature that distinguishes a portal from a search-engine is that a portal includes additional functionality of *'personalisation'* to deliberately enable easy access to items likely to be of interest to the individual, and encourage the

person to remain within the site and return to the site. These services include forums, news groups, and e-transaction capability, etc., and are tailored to the end-user needs with clustered information content related to the special interest of the user. Clustering of specialist interest information and services is an important feature of any portal.

Two main categorisations of portals exist:

- Horizontal
- Vertical

Further variations exist including:

- i-Portals
- Enterprise Information portals
- Commerce portals

Vertical portals are dedicated to a specific demographic, product, or topic category. Often referred to as 'vortals' these sites may be little more than second-generation web sites. It is these sites that can be categorised as having *affinity* or *community* portal usage. Such communities of interest may include specific ethnic groups, specific age groups, alternative lifestyles, religions, and other groups perceived to form a cluster or community of interest. The vertical nature of such portals indicates their narrow focus with in-depth treatment of services, bespoke to the needs of the special interest cluster.

Community Portals can be categorised as Vertical Portals and distinctive sub-types emerging are the Civic and Civil Portal.

2.2.2 *Horizontal portals – 'Mega-portals'*

This term is generally used in relation to sites such as Yahoo, MSN, AOL, and Freeserve, because users use them as access points. The term search engine is too narrow and inadequate to describe the breadth of services and offerings within such sites. Sometimes referred to as 'consumer' portals, these sites are now intended to build consumer communities and business-to-consumer (B2C) opportunities. They have mainly grown from the earlier development intended as search engines and now include additional features and services. Their origin lies in internet use itself. Because the Internet is unbounded and unstructured users' need a guide to find a way through the plethora of information, and there are a lot of blind alleys. Users needed help to identify the material they were looking for and signpost directions to assist in finding information. Search engines enabled simple keyword searching for information and content. The exponential rise in users of search engines soon attracted attention from advertisers who saw opportunity and as search engine providers had to finance their service somehow, selling advertisements soon followed. Revenue through advertisements rapidly grew but providers soon realised that the space for displaying ads was limited. The two pages, which the searcher usually visits, are the 'home-page' in order to enter the keyword for the search and the results page. After the surfer finds what he/she was looking for they leave. Similarly, with the pre-indexed categories,

once the user went through the desired listing they exit, hardly looking at more than three or four pages.

Eventually the search-engine operators realised that it would make more sense to keep the surfers on their page, or at least create sufficient stimuli that would develop dependency and a loyal customer.

2.2.3 Commerce portals

As examples of horizontal portals these sites focus on selling products/services and retaining customers to repeat purchases of new products and services. Portals in this category include Amazon.com, Freeserve, etc.

Main groups of portal features include:

- Search and directory services
- Desktop-like applications
- Personalisation tools
- Product catalogue
- Community features
- Transactional capability

2.2.4 Search and Directory services

Most horizontal portals started out as search engines with their primary function as the search facility, e.g. Yahoo. Three main categories of search mode generally exist:

- Simple search
- Advanced search
- Category search

A 'simple search' mode requires the entry of a *keyword.* Advanced searches allow narrowing of the search by using boolean expressions like AND, OR, etc. The third type enables a user to confine a search within a specified or chosen category, e.g. education, computing, etc. Some portals enable category filtering within their search to deny access to selected categories, e.g. Sexually explicit material, Violence, Drugs.

Keywords and meta-data are linked to intelligent agents and discovery services which link to other related interest sites, e.g. books on similar topics; other products and services for sale on-line that link to the keyword interest subject. A goal is to develop full context searching to obviate the need for metadata key words.

Users who do not choose to search using keywords, or who need information about a broader topic, can use searches commencing with broader topics in

directories that contain pre-indexed sites sorted by categories. Each search engine organises them in a slightly different way, and advanced search features including semantic searching are in development.

2.2.5 *On-line Desktop Applications*

Other services include on-line desktop applications. Most horizontal portals offer free e-mail facilities and also enable a user to establish a free personal web site around which the user can personalise features and links. The benefit to the user is location independence and an e-mail address that does not depend upon an internet service provider. The benefit to the portal provider is building user dependence by giving users services that they will return again and again to re-use, and through this dependency 'pushing' other services to the user through banner adverts, etc.

2.2.6 *Personalisation*

Personalisation in the portal context is a two-way thing. A user can personalise and customise their portal environment through the tools available for use. For example, news options range from showing only news headlines to multi-choice selection of the source from where the news is obtained.

Conversely, through the actions of personalising an individuals 'portal presence' the portal provider is able to gather intelligence and information on the selections the user has made, leading to creation of a profile of the user likes and dislikes that can be utilised to refine the selection of items to be 'pushed' to the user through targeted advertising. Portal providers may also

sell the profiles they gather to other companies to enable mailings of targeted advertisements.

2.2.7 *Vertical Portals – Vortals*

Vortal – a contraction of vertical portal refers to an advanced web site that aggregates disparate content and services of interest to a particular industry sector, geographic community, or special interest group. Many vortals serve communities that are based on common generic interest e.g. gardening.com. Dedicated to a specific demographic, product, or topical category, these sites are often little more than second-generation web sites, giving a focused environment to link vendors and consumers of services. However, their popularity and economic significance have earned them the title *'portal'*. Some analysts, such as Schuler (1996) use the terms *'affinity, or community portal'* for demographically focused portals. These are now big business, with portals being launched to cater to specific ethnic groups, specific age groups, alternative lifestyles, religions, and other groups that are perceived to form a community or market. According to the Gartner Group (2000), vertical internet portals are the fastest growing segment of Internet portals, with vendors providing features and information deliberately intended to encourage users to remain within the boundaries of the vertical portal.

2.2.8 *Community / Civic / Civil Portals*

Community Portals generally categorise as 'vortals'. Their development has been fuelled by rapidly diminishing costs of computers and wide-bandwidth

telecommunications services (Kraut et al, 1995). Community networks combine new types of computer/internet applications and a new type of social institution (Wellman & Berkowitz, 1997), i.e. the virtual community (Rheingold, 1993).

In this context a community portal is a computer network system that is developed for use by the local geographic community. Community services include:

- electronic forums (Newsgroups/Bulletin boards),
- e-mail communications, and
- World Wide Web access.

Often, but not always, access to the community network is free of charge, for the same reasons that society provides free public libraries. Garton (2001) asserts that ideally the community runs the community network and its portal service – not solely by an institution, local authority, or a small group of people.

In the year 2001 approximately 100 community network projects existed in the UK and around 500 in the United States and Canada (e-Envoy, 2001). Across Europe many other community portals exist and an International Association of Community Networking (IACN) is being established. Garton et. al (1997) identifies that people in many communities are interested in creating community portals without considering what it is that they hope to accomplish. Others have a good idea of what they would like to accomplish but have no

underpinning foundations that will help sustain the vision and keep the project focused on these goals.

Most early work on electronic networks for community use originates from the USA. In particular an American not for profit organisation called Computer Professionals for Social Responsibility (CPSR) paved the way through a number of influential developments (CPSR, 1993). An early community network project by CPSR, in 1992, was the Seattle Community Network (SCN). One of the purposes of the project was to implement an on-line service that embodied the spirit and principles that the CPSR members believed in. The SCN principles are:

- Commitment to access,
- Commitment to service,
- Commitment to democracy,
- Commitment to the world community,
- Commitment to the future

In addition, SCN developed a policy statement as it's underlying governing framework. The high-level statements for network users are:

- Free speech: SCN is committed to maintaining free speech rights for all participants.
- Free access: SCN is committed to maintaining free access to information for all participants.
- Right to privacy: SCN is committed to maintaining the privacy of individuals.

- Due process: SCN is committed to maintaining the right to due process of individual users of the network.

(Schuler, 1996)

In *New Community Networks: Wired for Change*, Doug Schuler (Schuler, 1996), a former chair of CPSR, discusses two forms of access to community computing resources: community networks and community computing centres. SCN provides e-mail, discussion forums, newsgroups, and Internet services to all members of the Seattle community. However, availability of on-line services is only half of the equation of making the technology accessible and affordable. Access to the hardware needed to connect to on-line services is the other half and community computer centres were established to fill a societal need. Installing computer terminals in all branches of the Seattle public library system provided access.

A CPSR position paper published in 1993 entitled "Serving the Community: A Public Interest Vision of the National Information Infrastructure" (CPSR, 1993) urged the adoption of several policy and design guidelines as follows:

- Consider the social impact of NII development.
- Guarantee equitable and universal access to network services.
- Promote widespread economic benefits.
- Promote diversity in content markets.
- Provide access to government services over the NII.
- Protect the public spaces necessary to foster community development.

- Encourage democratic participation in the design and development of the NII.
- Think globally rather than nationally.
- Guarantee functional integrity throughout the network.

(CPSR, 1993, p 64)

The policy guidelines are accompanied by the following design recommendations:

- Emphasise ease of use
- Provide full services to homes, workplaces, and community centres.
- Enable all users to act as both producers and consumers.
- Address privacy and security issues from the beginning.
- Develop open and interoperable standards.
- Encourage experimentation and evolution.
- Require high reliability.

(CPSR, 1993, p70)

The telecommunications policy group in Washington, D.C., established further principles as follows:

- Universal access – All people should have affordable access to the information infrastructure.
- Freedom to communicate – The information infrastructure should enable all people to effectively exercise their fundamental right to communicate.

- Vital civic sector – The information infrastructure must have a vital civic sector at its core.
- Diverse and competitive marketplace - The information infrastructure should ensure competition among ideas and information providers.
- Equitable workplace – New technologies should be used to enhance the quality of work and to promote equity in the workplace.
- Privacy - Privacy should be carefully protected and extended.
- Democratic policy making for the information infrastructure.
- Functional Integrity - The functions provided by the NII must be powerful, versatile, well documented, stable, reliable, and extendable.

(CPSR, 1993, p86)

These guidelines provide a framework that has crossed the Atlantic and been embodied in much of the thinking and development work of community portals within the UK.

Civic portal is a term that has arisen as a variant, or distinctive categorisation of the community portal. They possess the same attributes and functionality, but whereas community portals are generally developed and supported by non-government organisations (NGOs) and generally regarded as bottom-up approach – activist led, the civic network is sponsored and sustained by a government body. An example of a civic network is the City of Milan (www.milan.gov.it) (accessed March 2005).

2.2.9 Core Services for a Community Network Portal

Community portal services are categorised by Schuler (1996) into one or more of the six 'core' services listed below:

- Culture
- Education
- Local/National Government Services
- Health & Well-being
- Economic, Equity, Opportunity, and Sustainability
- Information and Communication

(Schuler, 1996, p81)

Examples of content found in UK Portals include:

Culture

- Forums for ethnic, religious, neighbourhood interest groups
- Community history and lore
- Recreation and Leisure activity information
- Arts events
- Community Calendar

Education

- On-line learning modules
- On-line homework support
- Forums for students, teachers, parents

- Q&A on major topics
- E services pen-pals

Local/national Government services

- Community information on local and national government services, e.g.
    - Police
    - Fire
    - Libraries
- Elected officials contact information listings
- E-mail to elected officers
- E-mail to government agencies
- Forums on major issues
- On-line versions of legislation, regulations, and other government information.

- Community action campaigns

Health and Well-being Services

- Community information on local and national health services, e.g.
    - Doctors
    - Hospitals
    - Dentists
    - Hospice
- Q&A on medical information

- Information on environmental hazards in the community
- Anti-Drugs/Alcohol/Tobacco information
- Access to health-care information
- Self-help forums

Economic Equity, Opportunity, and Sustainability

- Job listings
- Employment information
- Advertisements for wanted items
- Community Development projects

Information and Communication

- Local and Regional news and information
- Access to alternative news and opinions
- Special interest group news and forums
- Media literacy campaigns
- Email communication services
- Group working and inter/intra group communication
- Co-operation with community radio, etc.
- Access to library information, on-line catalogue searches
- Access to on-line periodicals
- Access to on-line databases
- On-line 'quick information'

2.2.10 *Community Portal Goals*

Deployment of telematic systems (Nora and Minc, 1980) to support community network services development led to take-up of portal technology to create the community portal.

The goals of individual public sector community network portals are as varied as the networks themselves, but Doctor and Ankem (1996) find three goals or expectations are generically common:

1. Strengthen Community: Increased communication and information will increase the sense of community, increase involvement in the community, and serve as a tool to solve some of the problems facing the community at a grass-roots level.
2. Improve Democracy: Community portals will "improve democratic governance and empower citizens to become more active and informed" (CITU, 2000.)
3. Ensure Inclusion in Implementing Electronic Government (IEG) initiative: Community network portals are increasingly seen as an interface with central government, and a means of ensuring that the entire community, irrespective of income, is able to access and participate in the e-Government initiative. This means using the network to support economic growth, education, social services, and life events interactions with appropriate services.

2.2.11 *UK Government Response to eGov*

The UK government has been highly influential in the application of ICTs in the UK. The landmark Bangemann Report in 1994 (EU, 1994) set out a blueprint for life within the European Union in the "informational age". The range of policies administered by the European Commission, through departments such as the UK Department for Transport, Local Government and Regions (DTLR), and Department for Environment, Food, & Rural Affairs (DEFRA), has focused on ICTs for enhancing economic activity (Fuller and Southern, 1999). The evolution of e-Government in Europe is towards t-Government (Cabinet Office, 2005). The i2010 programme (DTI, 2005) replaces the Lisbon Agenda, giving a five-year successor programme to e-Europe 2005, with key transformations from 2005 to 2010 of:

- Designing Services around the Citizen or Business
- Creating a culture in government of sharing services
- Raising the level of professionalism in IT enabled change.

(DTI, 2005)

'Modernising Government' (CITU, 2000) was a scene-setting paper introducing the concept of electronic government aspirations and agenda. This was followed by a major report from the newly created Office of the e-Envoy entitled 'e-Government Benchmarking Electronic Service Delivery. (e-Envoy, 2001). The UK Government Social Exclusion Unit Policy Action Team

report 15 (PAT 15) (SEU, 2000) gave an action agenda for implementation of e-government policies.

Under the Wired-Up Communities initiative (DfES, 2000) the Government invested £10million from the Capital Modernisation Fund to pilot the idea of connecting homes in disadvantaged communities (e.g. inner city and suburban estates, rural communities and villages) to the Internet. The objective was to assess how individual access to the Internet can transform opportunities for people living in the most disadvantaged communities, by developing new ways of accessing learning, work, and leisure services.

A vision for local e-government produced in 2002 (DTLR, 2002 e-gov@local), was aimed at exploiting information and communication technology to help transform the accessibility, quality and cost-effectiveness of public services and to help re-vitalise the relationship between customers and citizens and the public bodies who work on their behalf.

Over the 3 year period from 2002 to 2005 broadband access has improved significantly, particularly in rural areas. This has positively affected the roll-out of e-government across the UK. However, private sector telecommunication providers remain unwilling to commit resources and capital to invest in the 'dig' required to deliver broadband services, and local authorities do not have the money to commission the further provision of broadband connectivity throughout their geographic area. Until broadband access becomes pervasive and data services are viewed as another utility, along with

telephones, electricity, water, and gas, the future of community networks will not flourish.

2.2.12 *The Government Portal – DirectGov*

The government's citizen portal DirectGov (formerly UK Online / Government Store)(www.direct.gov.uk) (accessed Feb 2006) is the core element of the drive to get the UK on-line. The site is intended as a one-stop shop for government online information. Development of interactivity on this site was intended to provide the access to central government services. A 'channel strategy' has been developed (Cabinet Office, 2001) defining which customers to target with which services and through which channels, in order to add value to customers *and* to the organisation concerned.

UK Online Interactive was the original government portal development ((ukonline.gov.uk) (accessed June 2004). The first Annual Report (UKonline, 2000) published in September 2000 objectives were:

- to make the UK the best and safest environment in the world for e-commerce by 2002
- to ensure that everyone who wants it has access to the internet by 2005, and
- to make all Government services available electronically by 2005.

UK Online was superseded by UK Online Interactive as the government portal, undergoing a makeover in April 2002 to introduce interactivity channels

for various transactions with central government departments. Sustainability and development of services became problematic due to the original funding streams, mainly through New Opportunities Funding (NOF) support that ends in 2004. The emergence of the Online Government Store (OGS) signalled by the e-Envoy's department in July 2003 marked the beginning of the end of UKOnline as the government's main e-delivery brand. The OGS 'shop front' presented services grouped around customer needs and "audience segments". Sustainable funding for the services came from government departments owning 'franchises' for specific community groups, or channel services. The e-Envoy, Andrew Pinder (Pinder, 2001), saw the project as part of the Governments "journey towards Citizen Relationship Management" presenting government as a single, coherent entity, accessed via this single gateway service. The site is now re-badged as DirectGov and the e-Envoy's Office is now (since 2004) the e-Government Unit.

A further shift in strategic thinking in the e-Envoys Office was the policy framework for a mixed economy in the supply of e-government services (eEnvoy, May 2004). The framework establishes the principles and policies for creation of 'intermediaries' from the private and voluntary sectors. Intermediaries are described as organisations offering services targeted at and tailored to chosen groups of customers who may be citizens or businesses. These intermediaries offer access to public sector services on *behalf of their customers*, potentially including new services that are based on a government component. To facilitate, and give practical support to intermediaries, the government have created an e-Venturing Unit in the Office

of the e-Envoy. DirectGov enables searching across several government department sites from one place (e-Envoy, 2004). Access to local authorities via DirectGov was launched in 2006 as a new service (ODPM, 2006).

2.2.13 Interim Summary

Two main categories of portal exist:

- Horizontal
- Vertical

Community portals generically categorise as:

- Vertical portals

Two distinct types of 'Community' Portal exist:

- Civic portals – led by government organisations.
- Civil portals –bottom-up development led by non-government organisation (NGO) generally community activist led.

These interim findings indicate that this thesis is primarily considering the case of civic portals in the context of UK Local Government. At national level in the UK the early government portal development UK Online Interactive has been replaced by DirectGov and the Office of the e-Envoy has become the eGovernment Unit since 2004.

2.3 Social Impact of Community Portals

Garton & Wellman (1996) assert that "When computer networks link people as well as machines, they become social networks", which are generally

referred to as community networks (CN). The convergence of telecommunications and computing into 'telematics' (Nora and Minc, 1980) is often perceived as a potential saviour of the modern age, but the benefits of the "computer revolution" are unevenly distributed, mainly due to the lack of access to communication technology (Doctor & Ankem, 1996).

How individual communities adopt and use new communication technologies can be influenced by a number of factors that may come into effect in the context of community portal technology deployment. It is also the case that the 'people' element (e.g. local champions) is a significant factor in development, implementation, and adoption of community networks (Mumford, 2003).

The emergence of more sophisticated information and communication technology systems, coupled with more sophisticated users has justified the increasing use of technology to give a structured information environment within which a user can navigate to access information, and the emergence of approaches that deal with the social and organisational aspects of community portal development. The work of Mumford (1983) for instance concentrates on the human and social needs of information system development as well as the obvious technical issues. Mumford (1997) also reminds us that technology is only one piece on a very complex puzzle. In this sense technology is not the only driver and the need to understand the user requirements and user perspective are essential. Recognition of the

essentially social nature of community portals is crucial to the subject of this research.

The development of community portal technologies, and their relationship to broader social, and political forces, needs to be understood from multiple perspectives. Romm and Taylor (2000a) make the point that for some the development of community networks and portals has been viewed as a wholly technical endeavour. However, it is increasingly being recognised that the process of establishing and sustaining a community portal contains many sophisticated issues beyond the purely technical. Buscher and Mogensen (1997), for instance point out that IS development involves a complex interaction between the user and the technology. Cawood and Simpson (2000) consider the scenario of community portal development becoming increasingly problematic when extended across wider geographic communities, particularly if development teams are faced with meeting the requirements of different cultural backgrounds. Interaction thus may be with dispersed developers – some volunteers, others paid. The implications of managing relationships, the development methodology, and the effects of differing content requirements and needs are areas considered in this inquiry.

At a time when central government and local authorities are rushing to capture the benefits of advanced communication technology, (particularly in the context of e-Government and the 2005 deadline), analysis of the issues facing community portal developers is becoming increasingly important.

Ideas and research from community networking (Schuler, 1996) and social science (Garton, Haythornthwaite and Wellman, 1997) reinforce the need to balance technology capability and content design with the people issues of what service interactions are required in a community portal. The later writings of Dara O'Neill (2000) on evaluation frameworks for community informatics were also considered, to assist in the process of conceptualising the literature findings.

Romm and Taylor (2000) seek to explain and predict the prospect for success for community network projects being influenced by lack of social harmony within a community. Communities with higher degrees of harmony are associated with higher success prospects for community networking projects.

2.3.1 Understanding the Driving Influences on Community Portals

To understand the drivers of community networks and their portal Interfaces it is necessary to complement an understanding of the telematic systems with a general knowledge of the social and political dimensions that are impinging on the take-up and use of community portals. Three intertwining strands of telematics, social science, and information science are related to the study of community portal development. A growing base of literature seeks to analyse the use of these new technologies for community development and regeneration efforts. The use of technology for community purposes includes areas such as community networks, community technology centres, electronic democracy, cultural enhancement, and on-line participation (Lentz et al., 2000). Research in community networking brings together theories of

computing, information, and communication technologies, i.e. telematics, with the pragmatic field of community development (Romm and Taylor, 2000).

Community networking is generally considered as:

> "a process to serve the local geographic community – to respond to the needs of that community and build solutions to its problems. In the social sense it is not a new concept, but using electronic communication to extend and amplify it certainly is"
>
> (Morino Institute, 1994).

A community network (CN) has the purpose of fulfilling social functions (Gregson and Ford, 1998; Schuler, 1994, 1996). If community networks are broadly understood, access issues are not new. Examples such as the wired telephone system took decades to achieve pervasive access; compared with the relatively fast rise in adoption of the present generation of wireless mobile telephone systems achieving ubiquitous popularity in less than a decade.

Because of the relative newness of the internet and telematics little substantive research theory or literature exists on effective ways to measure change brought about by providing access to ICTs in communities. Government funds such as the New Opportunities Fund (NOF), and Capital Modernisation Fund (CMF) have been instrumental in funding information and communications technology (ICT) Community Centres and now through the Implementing Electronic Government (IEG) strategy local authorities have funds to develop community portal implementation. It is likely that the pertinent knowledge base will increase in the coming years as more robust

evaluation frameworks are developed as a result of these and other programmes.

According to O'Neill (2001), following a literature review of more than 30 evaluations of community network projects between 1994 and 2000, research indicates that theories for the outcomes of community network projects generally fall into five key areas:

- Enhancing strong democracy,
- Increasing social capital,
- Empowering individuals,
- Revitalising sense of community,
- Providing economic development opportunities

Enhancing strong democracy: The UK government programme for increasing democratic participation (e-Envoy, 2002) seeks to increase participation of citizens in civic communities with the process of democracy. Pratchett (2002) was commissioned by government to investigate the security issues of implementation of the process of on-line voting, and these are largely understood with technical solutions available. McPherson (1997) concluded that ICT can provide new means of political communication, increased access to information (if allowed by laws and conditions), increased participation in democracy through e-voting, and improved data handling.

Clift (1998) challenges these views. Although he believes that ICTs, (through the ability of communications to span distance and time) offer the potential for further engaging citizens in the democratic process, he challenges the above views and suggests reasons why participation is low, and gives a model for positive improvement via on-line voting. Others question whether use of ICTs can actually enhance strong democracy. Bimber (1998) dismisses the claim that the Internet will erode the influence of organised groups and suggests a model in which the Internet contributes to the on-going fragmentation of the present system of interest-group politics and a shift towards a more fluid, issue-based group politics

Increasing social capital: Arguments for social capital inherently include a reliance on the importance of social networks within communities (Wilson, 1997), identifying features of social organisation such co-operation for mutual benefit. Social network analysis techniques are available to support research on community networks. (Garton, Haythornthwaite, and Wellman, 1997; Wellman et al., 1996). These techniques have been used to tackle boundary definition within a community by considering communities as networks of individuals connected both locally and remotely (Scott, 1991; Wellman and Berkowitz, 1988).

Empowering individuals: Includes discussions of information literacy and ICT access for disadvantaged communities so that all people have opportunities for meaningful participation in an increasingly digitised society. Within the notion of empowerment, research focuses on information literacy –

the skills and knowledge necessary to be able to effectively use today's information and communication technologies (Adler, 1999). Much of the work advocating information literacy focuses on the economic benefits of having these types of skills, and the possible negative macroeconomic consequences of denying these skills to any subset of the population (Council, 1999; Meares and John F. Sargent, 1999; Slowinski, 2000). Others have taken a more proactive stance by focusing on ways to improve information literacy skills such as focusing on generic skills (Anderson and Bikson, 1998) or generating appropriate content to encourage use by traditionally underserved communities (Horrigan, 1999).

Community network projects that seek to empower individuals generally focus on delivering the skills and knowledge to be able to utilise community portal technology to fully participate in accessing on-line content, services, and interactions.

Revitalising sense of community: Inherent in community networks research is the concept of community. This includes increasing community involvement and commitment to geographic communities. Discussion of *community* arose out of concern about the transition from agrarian to urbanised societies (Durkheim, 1964; Tonnies, 1955). Difficulties arise in definition of concepts of community in that they tend to focus on internal relationships within a defined locality without reference to ties and links outside the geographical domain. Traditional studies have overemphasised local cohesion and solidarity and as a result, they failed to recognise or

address properly the difference and varied levels of commitment and exchange most people sustain within their networks (Crow and Allan, 1994). Many people are seeking ways to re-build and re-generate community (Schwartz, 1991), through the use and characteristics of ICTs, and by:

- Facilitation of information sharing and communication among community members;
- Use of ICT to revitalise disconnected communities;
- Improving citizen to citizen, and citizen to local/central government.

Through initiatives and projects aimed at these areas it is believed that the collective good of the community can be improved. (O'Neil, 2001).

Providing economic development opportunities: Theories about the use of ICTs to encourage economic activity are closely related to information literacy and the digital divide. Community network research frequently discusses the potential of ICTs to encourage economic development in communities (Castells, 1996). Gurstein (Gurstein, 1999) searches for factors that may hinder the successful diffusion of ICTs within communities and finds that less than successful community network projects are associated with the failure to link the projects with local economic activity and to unite community efforts behind strong leadership. Gurstein (1999) sees community networks as a double-edged sword in that it can facilitate community development, but it can also be associated with discord in the community. He identifies four strategies for using community networks as an enabler of community development:

- Marketing tool for small business

- Facilitator for on-line commerce (e-Business) transactions.
- Enabler for mobilisation of a wider range of resources for community economic development, and
- Distributed network for the emergence of new networks and economies of dis-aggregation

(Gurstein, 1999).

As Castells (1996) has argued, 'the new economy is organised around global networks of capital, management, and information, whose access to technological know-how is at the roots of productivity and competitiveness (Castells 1996; 471).

One way of differentiating the streams of literature is to consider "optimistic" and "pessimistic" strands concerning the societal impact of the "information society". Daniel Bell (1974) takes a technological deterministic position and suggests that the information society will see an information economy replacing the manufacturing sector, and there will be a shift in the economy to the provision of information services. Bell also argues that there will be an increased role of science and technology, and technical people will be the sources of power. The new breed of "Knowledge Workers" will be valued for what is in their heads and a new opposition represented by the knowledge and service workers will replace the old class divisions between bourgeoisie and proletariat.

Bell (1974) argues that there will be a new social framework that will be built around the infrastructure of telecommunications, and social and economic exchange will be built around this infrastructure. He sees the computer as

playing a pivotal role in this revolution. This argument is extended to emphasise the importance of community portals in facilitating these new social interactions. Gates (1996) and Negroponte (1995) are similarly optimistic.

David Lyon (1990) critiques Bell for his deterministic position and discusses how conflicts and struggles arise within this "information society". Lyon's critique provides an examination of some of the negative effects of the processes of globalisation that are relevant to a critique of the process of community network development and community portal implementation.

2.3.2 Knowledge Workers

The traditional concepts of the "where" and "when" of doing work are rooted in the distant past. Before the industrial revolution agricultural workers went to fields to tend crops. After the industrial revolution workers migrated to the towns, and lived in close proximity to the factories that provided work. The pervasiveness and use of IT has undermined many of the assumptions behind this 'geographical blueprint'. However, it is argued by some (e.g. Peters 1995, O'Banion, 1997) that knowledge work can be *independent* of space, since communications technology allows the almost instantaneous transmission of data across national and world-wide networks.

Since *work* is no longer dependant on place through the use of telematics, it is reasonable to extend the argument to access to community information via

telematic systems enabling users to interact with systems and obtain services in ways previously impossible. Birchall and Lyons (1996) point out that we are in the era of "knowledge workers" whose added value lies in the intelligence and knowledge they apply to the business, rather than any physical work. These concepts are embraced by the term 'future work' (Birchall and Lyons, 1996), and following similar arguments the added value of knowledge, through access to community information services, are similarly persuasive.

The dogma associated with "independence of time and space" in knowledge work is significant and relevant to an investigation into community portals. Issues such as remote on-line access to information in convenient locations, e.g. i-Kiosks, are a typical justification. A hampering feature at the present time is absence of Broadband access, especially in rural communities.

Although Romm and Taylor (2000) never fully engage with the importance of the use of information technology, it is fair to say that the use of IT is implicit in these developments, an obvious example being the phenomenon of social relations through on-line communications facilities. For the purpose of justifying the fundamental arguments for this thesis it is important to critique the debate concerning globalisation and "one world" convergence (Kulkin, 2000) as factors linked to lowering the barriers to community networking by obviating the time-bound, place-bound constraints of distance of separation.

The rapid emergence of electronic communications and information technology has led to access issues and themes of inequality and

fragmentation are commonly referred to in discussions concerning the "information society". It is worthwhile examining some of the key themes around the information society in the context of community portal development. Alvin Toffler's (1980) well-known "third wave" concept is perhaps the clearest example of the idea. Toffler describes the first wave of the economy as being agricultural, which lasted roughly until the eighteenth century. The industrial revolution created the industrial city, destroyed an existing job market based on the land, and set in its place a new one based on the factory. The period also led to new forms of government and moves to "massification" in production.

The latter day "third wave" is concerned with the "information society". Nora and Minc (1980) identified the convergence of computing and communication as *telematics*. Fuelled by high bandwidth telecommunications and computing (telematics) together with drastically reduced size and cost of computing, information technology is steadily becoming pervasive throughout society. Deployment of telematic systems to support community network service development (including the community portal) led to early optimism (Gurstein, 1999) that community regeneration can be achieved through the liberating and enabling role of IT in community networking, following the collapse of some traditional industries, e.g. fishing, coal-mining, etc.

Bannon and Griffin (2001) find such optimism unfounded and express caution about over-claiming the capability of community portals to impact appreciably

on regeneration, especially when broadband services are not yet pervasive in the UK.

In 1964, the Canadian communication theorist Marshall McLuhan (McLuhan,1964) famously argued that the modern media has made irrelevant the role of time and space in separating human experience and created a global village – a common global experience. It is believed by many optimistic proponents of globalisation (for example, Ohmae, 1990) that the global organisation can and ought to be based on electronic technology creating a global community life. This line of argument leads to the proposition that community network development, (supported by community portal interfaces), will significantly impact the former barriers to communication, in particular through the asynchronous nature of many e-communications.

This argument is simplistic as it assumes equal access to technology and also presumes the national, regional and sub-regional culture to be an obsolete notion in that geographic boundaries have, or will, lose all present relevance. Ohmae (1990) is an advocate of the idea that "cultural convergence" is taking place and the process of cultural convergence over time will largely eradicate issues of cross cultural difference. This optimistic view tends to ignore the resilience and "embeddedness" of culture. With regard to community networks acceptance of the existence of national, regional, sub-regional and small group culture makes the suggestion of the convergence ideal simplistic and facile. Even if local and small group culture can be manipulated, Levinson and Asahi (1995) argue that national culture is more resistant. The

deep "embeddedness" of social factors such as tradition, and historical background are, they argue, unique.

Support and preservation of local culture needs to be anticipated and included in the response to development of community portals. This reinforces a requirement for locally driven responses, probably lead by local authorities within the UK. A necessity exists for tools and facilities, at sub-community level, to enable local publishing of content pages within the community portal, by individual 'champions' drawn from within the community.

Cultural differences existing between central and local government departments create a gap in understanding, and therefore lack of collaborative development. The UK government aims to bridge this gap through improved dialogue between the Office of the Deputy Prime-Minister (ODPM), and the Office of e-Government (OeG) (eGovMonitor, March 2004).

Improvement is evident through recent UK initiatives such as the Citizen Relationship Management (CRM) programme, with its *'Integrated e-Government Delivery Roadmap Framework'* (Devin, 2004). This UK national programme is aimed at saving time and resources in re-inventing the wheel through central development of tools, components and best practice standards (www.crmnp.org) (accessed Dec 2004).

2.3.3 Community Networks and Regeneration

Much has been written about the role of information and communications technology as a principal input of the "new economy". Despite the rhetoric of the knowledge economy, the information age, and the network society, there is evidence of a concerted effort by local and regional governance agencies to initiate planning and policy for ICTs as a regeneration tool (Southern, 2001). Following a study of ICT deployment in the North-East region of the UK Southern (2001) argues that 'the region must engage with the new knowledge economy and that public and private must come together to enable businesses, large and small, community groups and government to play a full role in the new economy; by becoming more knowledge driven and through raising information processing capabilities'. Southern and Tilley (2000) argue that at the very least ICT technology appears to offer a neutral space in which the public and private sector can come together to formulate mutual policy that will offer, to both sides, benefits. The paper also contends that technology in regeneration is socially shaped, although the dynamics and processes involved are often negated or marginalized at the expense of the perception of accrued benefits from the adoption of ICTs.

According to Southern (2001) *'there is a misconceived assumption that ICTs will automatically translate a locality or a business into something competitive'*. Although the Northeast project (Northern Informatics, 2000), (One NorthEast, 1999) experienced some difficulty in terms of measuring the "success" of what they were involved with, they report that research to date suggest informatics partnerships and coalitions in the region are characterised by the "energy and commitment of key individuals" (Southern, 2001). This appears to support the

argument of 'social harmony' (Romm and Taylor, 2000) and the fact that the *people* element of commitment is a significant factor in community network and portal development.

The role of community portals in regeneration is being articulated against this background. While there is a focus on technology in economic development from various viewpoints, the impact is in the way that the two are associated. It would therefore seem unreasonable to suggest that technology does not matter to economic development. Evidence from Romm and Taylor (2000) suggests that it does and it is not necessarily technologically or economically deterministic to say so. It is reasonable to question whether technology automatically produces economic growth and regeneration and when it does, are communities any better off than before when subject to the vagaries of global markets destroying employment.

Horrocks & Hambley (1998) point to limiting factors in local authorities that hamper the potential for community network and portals to positively contribute to regeneration within communities. A sustained climate of lack of resources (Horrocks and Hambley, 1998) within local government has led to a mind-set where developments which may carry a risk, and/or cannot demonstrate obvious savings, or where the benefits are difficult to assess, are treated with suspicion or discouraged outright. Horrocks & Hambley (1998) continue to assert:

> "Given these factors, it seems likely that while the design of local authority web sites will become ever more slick and sophisticated, the majority of local authorities will find it difficult to address one crucial, overriding question. How

> can, and should, new information and communication technologies like the Internet facilitate the redistribution, dissemination and sharing of information which will be crucial in building the new relationships to enable regeneration".
>
> (Horrocks & Hambley, 1998, p7)

From all the above views the scenario which emerges then, is of a two-tier democracy: a 'big' democracy, concerned with policy and decision-making at a national and international level, and a 'small' democracy where 'ordinary' citizens try to make a difference in terms of the quality of everyday life.

This argument is supported by Jerry Mechling (Mechling, 2002) who explains that 'information age governance is following predictable patterns, but it is just the start of something big, and as yet we have a long way to go'. He continues to report and explain a recent trend towards Citizen Relationship Management (CRM) that conceives of government as 'a single entity rather than a series of departments, creating for the citizen a single and highly integrated experience with government'. This aligns with the transformation of the 'UK Online interactive' government portal into the 'On-line Government Store' development, and the further development of DirectGov (Edwards, 2004).

A third categorisation is the civil society non-government organisation community network / Civil portal developments that exist outside a government sponsored framework and largely comprise community activists as a bottom-up democratic development.

The problems of complexity of software systems to truly support the community portal, and the probable inability of many local/regional authorities to develop and sustain truly integrated portal services, leads towards a view of central investment to create the 'big' portal for community use, as a central development. (Musgrave, 2004).

2.4 Technology of Community Portals

Portals are technology-based systems. Internet presentation techniques are used to deliver the portal features, but until recently a key limitation in the Civic portal was the inability to integrate the 'front-office' presentation services into the 'back-office' existing systems. Technology solutions are now becoming available to remedy this problem. The basic technological architecture typically consists of four main components:

- User interfaces
- Software for community networking
- Computer hardware
- Delivery medium

User Interface - Attributes of the interface include the ability to quickly convey to the user the capabilities of the community network services. Coherent integration of different information and services into a package that gives a common look and feel as one community network system is important. This is primarily accomplished through the design – both the 'web' design and

the 'open system' design, to give the appearance of one system rather than several distinct ones.

Community network software

A community portal provides a framework giving access to a collection of software services. The basic software services that community networks generally provide are:

- Forums or discussion groups – moderated or un-moderated,
- Access to static information contained in files or web-pages, i.e. community information,
- E-mail services,
- Searchable databases
- Service interaction channels

A critical question is how these software services are organised into a unified, coherent community network. Two alternative development approaches exist:

- Portal software packages from external vendors, or,
- Do-it-yourself, in-house development

Various software vendors now exist with portal packages mainly intended for commercial enterprise information portals. Alternatively, 'bolting' together individual service software to give a system bespoke to the needs of the individual community portal is possible. This could be achieved by adapting or integrating existing components rather than attempting to develop system software from scratch. However, designing and formatting information and content takes time and effort on the part of the information developers and this in itself can be a daunting task.

Community Network Hardware

At the heart of the community network system is the hardware that supports the applications and content storage. The server hardware needs to be of sufficient specification to support concurrent communications with potentially large numbers of community users.

Delivery Medium

Telecommunications systems to support dissemination of community information and enable interaction between users as inter and intra-communications with various systems and services are many and varied. Broadband communications are advancing rapidly using copper, optic-fibre, radio and satellite systems for community network inter-connectivity. Interactive digital television, Third generation mobile communication devices, and the latest Personal Digital Assistant (PDA) devices emerging from the laboratories are likely to take community portal access beyond the current dependency on personal computers for network access.

Technology Infrastructure

The technological infrastructure adopted will be dependent upon many factors and there is no single model. It will depend upon the objectives, interests, services supported, and resource capability.

The software and hardware has important implications both for the developers and for the users within the communities that the portal supports.

Investigation of the range of technology in use is a core element of this thesis. The technological infrastructure adopted depends upon many factors – objectives, interests, and resources being the main ones.

The most relevant parameters in terms of technology cost are:

- Access methods (e.g. telecommunication lease lines, etc)
- Internet connection services
- Number of concurrent users
- Types of interaction (graphics, video, etc)

2.4.1 Challenges and Strategic Issues

Community networks help facilitate communication between large numbers of people using fairly sophisticated technology. A portal development is a challenging endeavour requiring some degree of organisation to help manage the process effectively, efficiently and humanely. Even more challenging, however, is the desire to move beyond mere management of processes into an atmosphere where users of all types are finding that their use of the network is rewarding to themselves and the community.

Community portal development will be confronted with many challenges over the next few years. Technology changes are one factor but other interactions

can mean legal difficulties, financial ruin, emotional chaos, unsustainability, or, most likely a slippage of the community network portal into marginalisation, disinterest and disuse.

Sustainable funding to support the portal development is a major issue as the technology is likely to be capital intensive and the operational support revenue intensive. Is there a funding model that is principled yet effective to put in place the technology required for portal implementation?

2.4.2 *Urban and Rural Community Networks*

Differences in capability for deployment of ICT in urban compared with rural areas is recognised, along with the differences between community networks and the deployment of community technology access centres in spurring economic activity.

Early commentators such as Toffler (1980) suggested that the new communications technologies have an 'anti-centralist' tendency. However, research at a national scale in Great Britain (Richardson & Gillespie, 2000) highlights the problems of access to technology in rural areas, and argues that policy approaches have been too narrowly focused around the supposed distance-shrinking powers of the technology and, in particular, have failed to take into account the realities of market relationships between urban and rural areas. Responding to such failures Gibbs, Tanner & Walker (2000) point to

the high level of interventionist activity occurring at local levels through the strategic use of telematics by local authorities and associated partners.

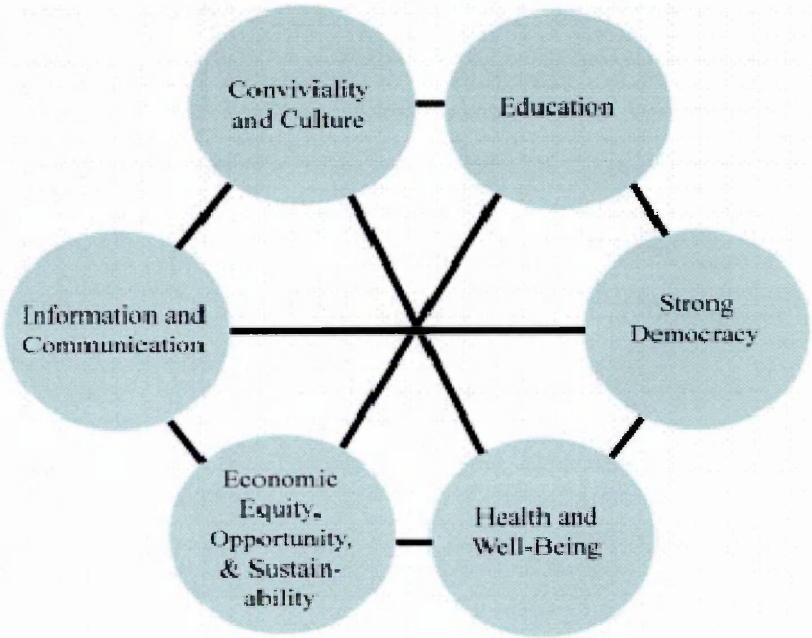
The national migration to e-government from 2000-2005 following the Lisbon agenda for an e-Europe action plan has promoted and supported community portals in manifestation of this activity. The new i2010 agenda sees portals as a component of the transformational government initiative.

2.4.3 Long Term Impact and Sustainability

Success of community portals is far from guaranteed, and existence of civic portals may be replaced through merger into the overall eService delivery structure of government local authorities on-line presence (Morino, 1994).

Schuler (1996) refers to McIver (1970) for a description of six core values (figure 2.1) that maintain the "web of unity" of a community. These core values: conviviality and culture; education; strong democracy; health and well-being; economic equity, opportunity and sustainability; and information & communication, are all strongly interrelated.

figure 2.1 Community Core Values



(source: Schuler, 1996, 2005.)

Attributes to the core values are expressed as follows:

- Conviviality and Culture: belonging, being supportive, inclusive, active, conversational, affirming.
- Education: equitable, empowering, effective, lifelong, inquiring, flexible, providing individual attention, creating communities of learning.
- Strong Democracy: deliberative, equitable, proactive, functioning every day, voluntary, pluralistic.
- Health and Well-Being: equitable, holistic, preventive, humane, community-oriented.
- Economic Equity, Opportunity, and Sustainability: responsive, responsible, fair, co-operative, collaborative, people-oriented.

- Information and Communication: participative, trustworthy, affordable, universal, civic, pluralistic.

Schuler (1996, 2005) believes that using technology to strengthen and support these core values, along the lines suggested in the attributes, will result in stronger, more coherent communities. The major challenge in relation to use of information and communication technology (ICT) is the need to develop community media that strengthens communities - by providing increased access to minority and alternative opinion, and by guaranteeing increased involvement in a productive way by all members of the community (Gurstein, 2002).

Research evidence (Musgrave, 2004) indicates that the majority of UK community portal development is based on project-like 'windfall' capital and revenue funding streams that are time limited. The project 'architects' and developers may themselves be operating on a 'hobbyist' basis, perhaps with only ephemeral ties due to other commitments. Sustainable portal development requires a trajectory towards mainstream service development strong linkage to mainstream. Evidence exists over each of the two past years (SOCITM 2003, 2004) identifying a correlation between top-tier councils in England within the Comprehensive Performance Assessment (CPA) process, and high ranking web-site/community portal presence. To date there has not been explicit reference to e-Government and community portal preparation or implementation in the CPA process, but SOCITM predict that this linkage will be established in the near future. The necessity to meet new

criteria linked to such a development would aid sustainability through resource allocation.

In this community portal context *sustainability* is about culture, not just the mechanics and processes, and is more than technology. It is about the environment and the fluid landscape in which community networks operate, and community portals are developed.

The portal must be sustainable, and some desiderata are:

- Management structures to implement and achieve strategic and operational objectives.
- A technology architecture based on common standards and common components (including open source software with support).
- Strong linkage between portal developers and the citizens' (users) they are intended to serve.
- An organisation to secure stable sources of income at sufficient levels to enable sustainable operation.
- Organised and accountable forms of quality control, in particular where aspects of editorial control of content is devolved to developers in the community.
- Lowering of cultural barriers between central and local government.

To increase the sustainability of portal projects there is a need to "work towards establishing common frameworks that will enable applications and services, from different sources, to work together" (Olivier, 2004). This

supports the arguments for a Service Oriented Architecture (SOA) as an element of sustainable development.

Considering innovation as a 'community process' (Gurstein, 2004), as well as cascading knowledge and research from enterprise portal development and Grid research there is a need to "trickle-up" innovation. In this context feedback from local government development projects to central government developers, and their agents, is needed to engage exemplars of good practice in citizen service delivery. Such iterative cyclical feedback – cascading down and trickling up – is essential to sustainable development, through central / local government collaboration.

A 'sustaining networks' review gives actions to build knowledge, and support skills development, for those engaged in community networks (MacDonald, 2003).

Schuler (2005) points to Sustainable Seattle (www.sustainableseattle.org) (accessed March, 2005) for indicators of sustainability in community networking development, and identifies Penang as a second adopter of the principles outlined in the Seattle development (http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN017620.pdf) (accessed March, 2005).

2.4.4 *Following the Commercial 'Enterprise Information Portal' Model*

Requirements of community portals, both structurally and technically, can be associated with research and development undertaken in the commercial

sector with development of Enterprise Information Portals (EIP). Many parallel needs exist in both the community and commercial sectors. The characteristics of EIPs have relevance for design features for community portals.

Much can be learned from the commercial sector that has relevance for community portal delivery. The technology of portals and portal products has gained considerable momentum in the private sector and the business approach is relevant to public sector needs for community portal development.

The term *Enterprise Information Portal* (EIP), or enterprise portal is adopted in the commercial sector. EIPs provide users with a single web based interface to business information, and to the applications that produce business information no matter where the information resides. Information and applications within an EIP can be personalised to match the requirements and authorisation level of each user. Access may be customised to suit the role of the user in the organisation, through control of authentication, authorisation, and administration; e.g. a business analyst in a marketing department could be given a view of the marketing information required to launch a new marketing campaign. This information could include analyses of customer information stored in a business intelligence system, and other data drawn from elsewhere. Core functions are a business information directory, which points to and links together information and applications throughout the information supply chain. This directory can be maintained by a web-based interactive publishing facility or via interfaces that provide connectors to information and applications managed by collaborative processing, business

intelligence, e-business, front-office and back-office systems, and also internal and external web-servers. An EIP may also be used to provide connectors to the information systems of trading partners and key clients. The web-based interface of an EIP provides immediate access to information and applications of interest to a business user. It also gives access to a subscription facility enabling users to request that information be delivered to them, or an application run, when a certain event occurs. This may be when a particular date and time is reached (e.g. an analysis could be run at the end of each month).

The advanced functionality of enterprise portals serves as exemplars of system capability that could be considered for inclusion in community portal development. EIP technology is considered as they are becoming the common vehicle by which business information and applications can be accessed, both inside and outside the enterprise, from a single user interface: the new-look desktop environment of the future.

Insight into enterprise portals, (and the lessons already learned by industry), has potential for application within portals designed for community use. Before selecting and installing portal technology, business process analysis is necessary to determine information usage, workflows, and business needs. The objectives of the study are:

- Understand what the main application areas of the business are,
- Within each area identified:
    - Understand who uses the information

- Understand how information is used and how it flows into, within, and out of each of these areas.

This exercise is iterative within a company, i.e. undertaken for customer relationship marketing, then repeated for e-business, and further repeated for supply chain management, etc.

Different generic usage of information exist and user communities need to be identified and categorised before proceeding to analyse what information, applications and tools individual communities of users need to access via a portal to do their jobs.

Advances in enterprise portal technology lead to the concept of 'portlets' as small applications, written in a standard format, which can access the underlying applications – returning the information specified in the portal framework. (Linthicum, 2004; Linwood & Minter, 2004).

Technology advances from 2003-2005 modify the concept of the enterprise information portal to one of a 'process portal' (Davis, 2005). Portlets compliant to Java Specification 168 (JSR 168), or Web Services for Remote Portlets (WSRP) standards enable the creation of a Service Oriented Architecture (SOA) for portals. Within the SOA, such portlets can be utilised by Business Process Management (BPM) tools or workflow engines to assemble 'composite' applications within the portal, giving the user a single

interface to interact with all relevant information, but without the responsibility of personally determining and managing the process.

Composite applications can be considered as a disparate combination of applications that can be delivered through an enterprise portal through a SOA. Such portals are now being termed *process portals* (Davis, 2005). The potential of a process portal is achieved by masking the complexity of underlying applications. The necessity of multiple log-ins' is technically overcome giving access to a significantly wider range of information, whilst ensuring the integrity of the application and the data contained. The composite applications exposed by a process portal exploit the personalisation and other presentation features, providing the user with the most appropriate view on whichever devices they are using.

The Planning Portal in the UK (www.planningportal.gov.uk (accessed May 2005) is an example of a successful enterprise portal (operated as a government 'intermediary' agent service), where the fundamental portal technology is complemented by support resources (i.e. *people*) to assist with configuration, training, and integration with existing back-office systems in a council's IT infrastructure. This holistic approach has a business model that gives a sustainable income stream to enable the service to operate on a commercial basis.

2.4.5 *e-Grid Synergies*

Research and development in the area of 'Grid Computing' emanates from the e-Science community, with potential application in the development of enterprise portals in the commercial sector and community portals in the public sector. The Grid is the computing and data management infrastructure that will provide the electronic underpinning for a global society in business, government, research, science and entertainment (Hey et al, 2003). Web services describe an emerging distributed computing paradigm intended to address heterogeneous distributed information sources/repositories. Grid technologies can be aligned with web services to capitalise on desirable properties, such as service descriptions and discovery, automatic generation of client and server code from service descriptions, and compatibility with emerging open standards, services and tools. Alignment – and augmentation - of Grid and Web Services technologies is referred to by Foster (2003) as an Open Grid Services Architecture (OGSA). This architecture uses the Web Services Description Language (WSDL) to achieve self-describing, discoverable services and interoperable protocols. The result is a standards-based distributed service system that supports the creation of the sophisticated distributed information resources required in modern enterprises and inter-organisational computing environments, including community portals.

The evolution of enterprise portals through use of Grid concepts utilises technologies that were first developed to enable resource sharing with scientific collaborative communities working across the globe. The same

concepts are now relevant as a solution to the challenges relating to the construction of reliable, scalable, and secure distributed systems in the commercial sector. Today's enterprise portals will be transformed from separate computer resource islands to integrated, multi-tiered, distributed systems, where service components can be integrated dynamically and flexibly, both within and across various organisational boundaries (Foster et al, 2003). Extending this argument, service providers are now adopting Grid architecture techniques to transform standard e-Business processes, such as creation of a web portal presence, and providing them to multiple customers as an e-Utility. Exploiting the economies of scale that are enabled by eUtility structures is a further decomposition and distribution of enterprise computing functions. Grid development is now being used to design a new generation of enterprise systems, and this will cascade into the community portal arena.

Future systems will be a distributed architecture where system database solutions are developed in disparate 'intermediary' organisations, using common standards and components, within the national government portal 'Directgov' environment, including portlets embedded into local authority portal gateways as the user presentation interface. This approach will enable a blend of local content, backed by access to centrally hosted services. The user 'view' can still retain a look and feel of being in a local environment, whilst accessing advanced central service functions. Citizen-centric self-service interactions would thus be achievable, in a way that may otherwise be undeliverable.

This places Civic/Civil portals between Grid Computing portals and Enterprise/Commerce portals. Research and development in both these flanking domains can be utilised to directly benefit the development of community portal functionality, in particular at the 'middleware' layer of computer software development.

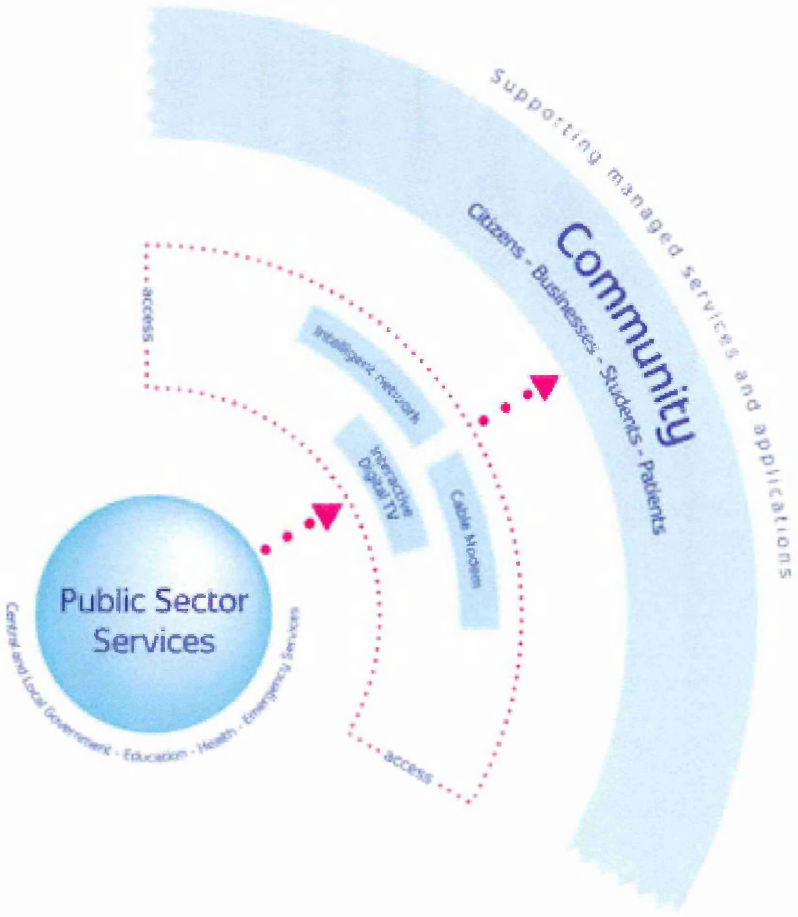
2.4.6 iDTV

Interactive Digital Television (iDTV) remains low in 2005, and diffusion of this technology is currently only progressing at a relatively slow pace. (Cabinet Office, 2005a).
http://www.cabinetoffice.gov.uk/publications/reports/digital/digitalframe.pdf
(url accessed January, 2006)

As an alternative presentation medium the potential of iDTV is significant, but the reality is that it is relatively difficult to use the interactive services and the user take-up was low in 2002 (source UK Portal Survey 2002). Funded projects to pilot this development include the Kirklees iDTV Project funded by the Office of the Deputy Prime Minister (ODPM), and Knowsley iDTV (Merseyside) in partnership with Telewest.

iDTV Service capability holds promise for the future but while take-up within the community is low there are problems in using this as a presentation device for community network access and community portal access.

figure 2.2 Community Television



(Source: Telewest, 2005)

(http://www.telewest.co.uk/business/public/communityaccesssolutions.html) (accessed March 2005)

In Blackpool a Community Television Studio has been installed at the City Learning Centre (in 2004). To date in 2005 there has been little take-up of service, or systematic production of programme material. This accords with the UK national situation where Digital TV National Project Board in 2004 concluded that there was low awareness of iDTV among service users, and providers, but there was a substantial business case (Scottish Executive, 2006).

2.5 Information Systems view of Community Portals

Telematics and informatics are terms arising from the information systems discipline. The *informatics* term generally relates to the convergence of telecommunications with information systems. Community informatics (Gurstein, 2000) is the new variant that community portal development is identified with.

2.5.1 Middleware Development

Oglethorpe (2002) identifies the lack of integration between front-end portal web presence and existing back-office databases as a deficiency in existing community portal functionality. A solution lies in middleware. The term middleware is used as something of a 'catch-all' term, but it is essentially transport software that hides the complexity of the underlying operating system and network to achieve 'transforms' of data format between systems.

Whereas traditional middleware concentrates principally on *data* sharing, the goal for portals is the capability for sharing *data and processes* between any application and data source in the overall enterprise system. Butler Group analysis of commercial portals (Butler, 2002) identifies that from the middleware viewpoint many of the alternative types of integration are being incorporated in Enterprise Information Portal (EIP) products. The Java 2 Enterprise Edition (J2EE) specification incorporates support for transaction management, distributed objects in the form of CORBA, messaging in the format of Java Messaging Service (JMS) and many of the functions needed for an XML based message broker. Message brokers are becoming the core

of many systems integration products and JMS in particular has led to a new generation of message-based applications that are being incorporated into commercial portal software products to facilitate systems integration.

Web services is a standards-based initiative that brings together existing protocols and standards, and ties them together in a way that allows the delivery of fine-grained components, using the Internet as the backbone method of delivery. Web services allow applications to be assembled from offered components across heterogeneous platforms. Web services are technology independent and platform agnostic. Butler (2002a) believe the future of any integration strategy is inextricably bound up in the web services model, and portal development has to take account of the move to web services.

2.5.2 MetaData

Information is at the heart of integration, and metadata (basically data about data) is a key requirement. In integration terms it is used to describe the structure of information that is held in disparate systems and processes.
A key aspect is to attach to every item a set of tags that identify the content. These tags are known as metadata. For seamless searching to work, the world has to agree to the specification of the tags. International standards groups (IMS, IEEE, Dublin Core) are leading this task to develop such schemas (specified lists), which define the tags that are in use (Jeyes and Church, 2003).

A challenge for creating metadata comes from the existing systems that are often monolithic, with data, code, and business logic being tied up in an indivisible block. For newer applications, metadata may already exist through the key benefit that XML has to offer as a data representation format: it comes with its own metadata. In the case of applications that are capable of producing and receiving XML messages, not only is it possible to simply parse the message to reveal its structure, but tools are available to manipulate and transform these messages. For transformation the eXtensible Stylesheet Language Transformation (XSLT) standard is adopted to convert any XML messages from one format to another.

Discovery and management of metadata is incorporated into enterprise portal architecture as a metadata layer within the integration adapters in enterprise application integration systems and enterprise information portal products. Lynch (2003) sees the existing process of metadata tagging as time-consuming to implement, complex to administer, and demanding on specialist skills to accurately carry out. Creation of metadata describing the content, ensuring the metadata is available in the appropriate schemas and formats, and through appropriate protocol interfaces such as open archives metadata harvesting is currently resource intensive. Lynch (2003) argues that an alternative is needed to the existing forms of metadata is required that is more intuitive and capable of automation to reduce the need for human participation. The goal of coherent management of a broad range of content

assets is full context searching, without the heavyweight overhead of the current systems of metadata tagging.

2.5.3 *Integration Strategy into Back office*

A factor limiting the functionality of the whole community (Civic/Civil) portal deployment is an inability to integrate the web front-end portal into existing back-office database systems. Chapter 6 describes a case study of Blackpool, explaining how integration is achieved through a software interface 'Citizen Relationship Management' system.

Innovations in technology including adoption of a Service Oriented Architecture, and use of Web Services, (Wilson et al, 2004) offer potential to improve integration, giving improved system functionality and citizen self-service interactive channels. This technology development is now being applied to extend portal services.

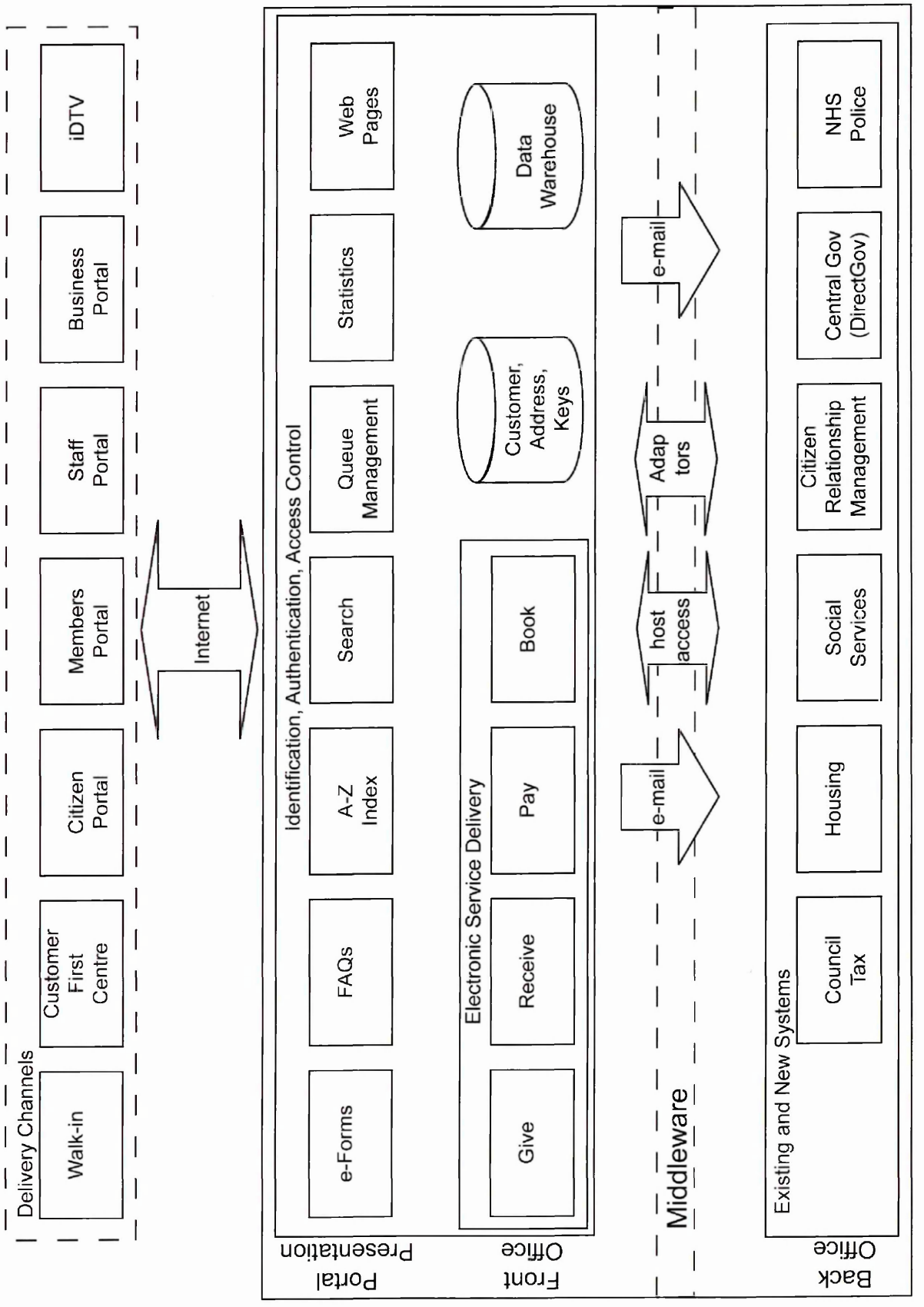
Evolution of the community portal term over the past decade, gives two identifiable and distinctive portal types:

- Civic Portals
- Civil Portals

Civil portals and Civic portals apply technology as a presentation medium for community networking and civic networking, but a particular characteristic of Civic portals is the facilitation of interactive service channels for on-line citizen access to local government services.

The Civic portal evolves to a complex model, with similar characteristics to the enterprise portal (section 2.5.8), where the portal (presentation) layer acts as a gateway to front-office information services, with deep-linking integration into the existing back-office systems as shown in figure. 2.3. Strong authentication is used to control access to the portal services, beyond which citizens are then able to interact with government departments for on-line transactions and services.

figure 2.3 The Civic Portal



2.5.4 *Portal Scoping Methodology*

The major challenges for community portal development are less to do with latest portal architecture, and more to do with addressing change of culture to embrace the portal concept. To successfully meet this challenge requires something of a change in approach in those who develop such resources (Musgrave 2004). When considering portal development it is 'vital to meet the needs of citizen users' (Gurstein, 2003).

A significant number of issues and complexities exist as a direct consequence of the breadth of different portal stakeholders and citizen users' needs and expectations. These issues influence the successful deployment of any on-line portal resource designed to meet their combined needs, and many of these are not technological. The issues are primarily cultural and to create technological resources that effectively respond to them requires an understanding of those cultural problems:

- concerns of content and service owners about misuse and abuse of their resources;
- complexities of different access rights for different users, or uses;
- conflicts of interest between resource users and resource creators; etc.

Some of these issues may be addressed at the interface through innovative systems engineering, whereby content and resource ownership can be restricted by permissions and authentication. Such control mechanisms for restricting access to resources are more likely to put citizen users' off using the portal than they are to encourage them to use/contribute to the portal site

and need to be handled with sensitivity. In order to satisfactorily exploit technological tools and methods in a way that will address (or at least recognize) the complexities of user needs, without re-inventing any wheels, there is a need to focus on how a local authority community portal might fit into the wider UK national portal framework of DirectGov. Edwards (2004) introduces a model with use of Intermediaries and suggests that citizens would access local resources via the national portal (www.directgov.gov.uk) (accessed Feb 2006), but this does not satisfy the Gurstein (2003) requirement for citizen engagement and places the user 'one-click' further away from the local authority. This is a different model to the concept of a citizen using a local authority portal as the local interface via which to access the national government portal.

The briefest of forays into the established methods for specifying requirements for a complex system (e.g. a portal) (Potter, 1991, p97) reveals that it will only work effectively for its users if the needs of the users are considered to be paramount. Potter et al, discussing formal specifications, explain:

> "an airline will express its needs for a new airliner in terms of desired range, carrying capacity, operating cost and so forth, rather than an expression of the size of wing and number of engines and choice of materials to be used during construction. Nearer home, perhaps, most of us will choose a car on the basis of the number of doors and seats, speed, acceleration, and fuel consumption figures, along with subjective measures of comfort, style and colour. Undue concern for the kind of metal from which the engine block has been cast is not usual for the average buyer. In short, the concerns of specification are the

issues that describe *what* a system must offer rather than the prescription of *how* these things are to be achieved."

(Potter et al, 1991, p97)

Whilst no-one would dispute the fact that engine metal is an important 'need' for a car, the point is that the average user does not care what the metal is, so long as the resultant engine meets the needs as he/she chooses to define them. Consequently, while it is essential to have an extensive understanding of the technological possibilities, successful deployment is dependent on an understanding of user needs.

To deal with the complexity of a community portal development in a way that meets the user needs it is suggested that a detailed scoping study is relevant. This would have helped in the case of Blackpool (Case Study – Chapter 6). There are well-established, structured methods to conduct the core of a scoping study. The following approach is based on Earl's principle of utilizing different methodologies for different contexts. In discussing information systems strategies, Earl (1989) identifies that no single formulation will work and that what is called for is a multiple methodology: a 'three-pronged attack', wherein *user needs*, *technological understanding*, and *innovative ways* of mapping one to the other, are each tackled from a perspective that suits their respective needs.

The combination of all three issues creates a comprehensive methodological approach that is illustrated in figure. 3.3.

Such an approach is implemented through three phases, summarized as follows:

1. **Defined needs of the target community.** This phase identifies and defines the 'questions' that the target community expect a community portal to answer. This is conducted through a top-down assessment of the needs of the target community, using a number of tried and tested informatics techniques to identify and explore the complex, nebulous, and hard-to-define user needs relating to community portal provision and use.
2. **Currently known portal options.** Through a bottom-up evaluation, this phase clarifies exactly what technological services and processes are, or could be, available to the community – the 'answers' that technology offers. This phase examines a spectrum of proven portal solutions and approaches, and engages with experts in the field, in this case at national and local government levels.
3. **New opportunities.** A mapping exercise that will define how known needs (the questions identified in 1.) can be met by any current portal provision (the answers clarified in 2.). This exercise also identifies areas of shortfall or mismatch and will, with an exploration of innovative information systems approaches emerging in the Portal domain, create a clear and feasible strategy for the specification of a portal development prototype.

The first phase of this method is essentially an analytical process for establishing clarification of the current (and future, where possible)

requirements of the target community in respect of a community portal resource. A structured management approach for this analysis is available through Soft Systems Methodology (SSM) (Checkland, 3.14 - Chapter 3 pages 173-176), to create tangible 'models' of complicated scenarios. This analysis will give a thorough understanding of the target community: what it does; how it does it; and why it does it. To fulfil such goals SSM suggests the construction of idealized models (a sort of complex wish-list) of various aspects of the target community's processes and needs, and then makes comparisons of these models against the real-world situations that they represent.

The second phase of the proposed method will provide an evaluation of current portal capability, and the state-of the-art of portal technologies, both within the target community's domain and in the broader community portal environment. The main aim of this part of the scoping study is to identify those technological solutions that already exist, or can be feasibly adapted, to meet the needs of the target community through an on-line portal development. This covers not only portal architecture options, but also the various fundamental components required for interactive services on-line, and their interfacing and integration requirements to back-office (database) systems.

The third phase of the method is an exercise to find areas of commonality between the results of the first two phases, i.e. it will map the community needs identified in phase 1 to the technological solutions identified in phase 2.

The mapping exercise should permit the identification of areas where current technological solutions can meet known needs, and as a consequence, will also enable the identification of areas of mismatch and shortfall. Furthermore, by adding an exploration of novel approaches emerging or being used elsewhere, this exercise will enable the discovery of areas where there may be opportunities for innovative development. This approach is illustrated in figure. 6.1.

The underlying reason for this scoping study is to inform the development of a portal prototype. By the end of the three phases information will be available for the development of a detailed specification document. In formal terms 'specification' can be defined as follows:

> "the process of defining the behaviour of a system as viewed from the outside. Due concern for the inner workings of a system must be given in order to achieve a working implementation, but we believe this to be a consideration subsequent to the achievement of a correct specification of the desired system."
>
> (Potter et al, 1991, 17)

The specification would typically cover:

1. A clear understanding of the processes, methods and functional requirements of a known target user community with respect to a Community portal;
2. A comprehensive overview of the technological solutions potentially available to the target community, and details of the organizations / companies who can provide them;

3. Shortfalls and mismatches between technological availability and user needs;
4. Understanding of novel or innovative approaches and technological processes that may be useful in resolving certain user issues;
5. Technical specifications required for the development of the portal prototype.

(Potter et. al, 1991, p19)

This gives a clear strategy for moving fluidly into the prototype development stage. The strategy is based on a continuation of well established systems engineering methods, using the latest techniques in Rapid Application Methods (RAD), and Extreme Programming (XP) (http://www.extremeprogramming.org – accessed August 2005). In a similar way to RAD approaches, XP utilizes the development of a series of interactive prototypes, each testing specific functions or concepts in the system, with regular feedback from appropriate members of the user community. This approach not only ensures that the underlying system is doing as it should, but also permits simultaneous testing of interface activity as well as more subjective issues such as user preferences, thoughts and ideas. Most importantly, by implementing this method, it is possible to elicit user responses at every stage of development, rather than using the more common approach of building an entire portal solution and then asking users for feedback.

2.5.5 *Informatics and Community Informatics*

Although the intrinsic properties and functionality of portals are similar, during the period of this research (2000-2005) the generic term community portal is now found to segment into 2 distinguishable categories of civic portals and civil portals. The research now distinguishes between civil portals arising from grassroots development within the wider field of community networking, and becomes focused on civic portals related to local government development for services to citizens and supporting citizen-citizen interactions.

Portals developed by government bodies categorise within the term civic networks. *Civic Portals* are characterised by their:

- top-down nature,
- government organisation sponsorship, and generally associated with
- information-push to citizens.

The second category of the *Civil Portal* is linked to characteristics of:

- bottom-up approach,
- generally led by non-government organisations, and
- typically community activist driven.

Telematics is generally taken to mean the convergence of telecommunications with Computing (Bangemann, 1994, Nora & Minc, 1980). Similarly, informatics is a term used to describe the convergence of information systems with telecommunications (Bangemann, 1994). During the research period 200-2005 a variant term of community informatics has

emerged (Gurstein, 1999). This term has rapidly become the generic term that encompasses community networking and the technology of community / civic portals. (Romm & Taylor, 2000, Keeble and Loader, 2001, Gurstein, 2005). Keeble and Loader (2001) usefully add to the definition of community informatics (CI) explaining the multi-disciplinary nature of this field for the investigation and development of the social and cultural factors shaping the development and diffusion of the new ICTs.

Clement and Regan (1996) identify an "access rainbow" for community informatics with seven discrete levels:

- Governance and policy
- Literature and social facilitation,
- Service providers,
- Content and services,
- Software tools,
- Devices, and
- Carriage facilities

Gurstein (2000) sees community informatics as a broad subject discipline that includes distinctive software, hardware and applications design; specialised approaches to automated information processing and management; the development of community oriented ICT training, education, and organisational design; or management approaches. Insights on how communities are organised, pursue their common objectives, and manage themselves internally to develop and process information, and how they

govern themselves, are all elements in a CI analysis and design of ICT applications (Gurstein, 2000).

Within the CI domain this first generation of community portals development represents a relatively primitive cohort of portal product offerings. The technology features of current portal product software are similar in the underlying operating systems to support largely web-based information content. The research finds this first generation of public sector, government sponsored portal are also primitive compared with Enterprise Portals in the commercial sector.

Through evidence from the Community Portal UK Survey (2002) and the case studies conducted in this research exercise there is an identifiable need for a second-generation portal development to raise the standard of capability, level of functionality, and services offered. The second generation offer of portal products, based on open source software systems is not there yet (2004-05) and realistically may take a further 5 years to emerge from the labs. Investigation shows that early development in Virtual Learning Environments (VLEs) in the education sector is transforming into open source software that is being further developed by commercial vendors, giving a mixed economy based on open source software code, which has been given industry strength development in a commercial product that is marketable. Similar development is anticipated in the public sector community portal development, where common interest groups will cluster to produce software that forms the

basis of open source development that can become the basis for a second generation of portal product development.

2.6 Summary of Chapter Two

This chapter reviewed the literature surrounding the topic of community portals. The chapter commenced by considering virtual communities and the social factors that influence community networks and community portal development. The chapter outlined the principles underlying portals in general and community portals in particular. It has also connected the growth of portals to the rise of a knowledge economy. The political drivers of e-Government were considered, with linking references to the e-Vision of the UK government. A number of themes from the literature review informed the choice of theoretical framework and research methodology, notably:

- The context of people and technology (social networks)
- Intertwining of the disciplines of social science, information systems & science, and technology.
- Complexity of community network analysis.

It is posited that it was not community portal technology *per se* that were responsible for a shift in the techno-politic-economic paradigm. Rather it was the 'technology and people' interactions that together determine the effective use of a community portal.

A broad theoretical framework combining ideas and research from community networking (Schuler, 1996) and social science (Garton, Haythornthwaite and Wellman, 1997), served as a general guide. The later writings of Dara O'Neill (2000) on evaluation frameworks for community informatics were also combined into the framework to assist in the process of conceptualising the findings of the literature review.

The chapter introduced the concept of two identifiable types of community portal:

- Civic portal, and
- Civil portal

each with different characteristics. An exposition of the technical elements is included, giving information content design factors, including a model for a Civic portal (fig 2.3) to visualise the requirements for this complex information system. The medium and long-term implications for sustaining portal development are discussed.

3. Chapter 3 Theoretical Frameworks

3.1 Introduction

This chapter takes relevant themes from the previous chapter and considers theories for use in formulating the theoretical framework for the study. Initially, the research exercise was intended as a technological enquiry. At an early stage it was realised that community portals needed to be analysed in their more general context in society. Two observations influenced the eventual selection of the topic telematics in the context of community portals.

Firstly, the majority of work emanates from the social science disciplines of communities and community networking. At the outset in 1999 there were few opportunities for the accumulation of insights based upon systematic empirical studies on the impact and attributes of community portals.

Secondly, a substantial amount of research offers a snapshot of various features of the way that social systems and political drivers are interacting with the technical systems, but provides little insight into the dynamics of the processes that give rise to widespread and continuous change through deployment of community networking. A plethora of business reports and vendor articles on portal systems exist, offering essentially descriptive and biased accounts of their products; generally hyping the changes that are presumed to be underway, but with little academic commentary.

Literature on community informatics also considers the inherent optimism. Pitkin (2002) critiques the 'hype or hope' arguments – pointing to Doheny-Farhina's (1996) call to constructive scepticism: " Bring doubt to every claim about the net, but be committed to moving forward".

Business reports on community portals rarely consider questions that derive from theory; nor do they offer critical reflections or analyses that are informed by received theory. The research study addresses questions about the nature of the transformations that appear to be associated with the new portal technologies, in a way that is informed both by information science research methodologies, which enable a more systematic account of these changes, and by an effort to build upon or to critique existing theoretical perspectives on the Information Society. (Dobson, 2002).

With respect to the second issue, the view is taken that a dynamic perspective is essential for an informed analysis of the transformation of local government service delivery capability, which may be associated with use of community portal technology (Castells, 2000; Gibbons et al., 1994).

In recent years, emphasis exists on the social science effect on communities of the impact of new technology. Researchers have investigated the social, cultural, political, and economic issues associated with community networks and the emerging community portals (Castells 2000, Dutton 1987; Kling et al 1999; Silverstone 1999, Mansell 2002). However, little is understood about how this may be applied to Community portal development and realised in

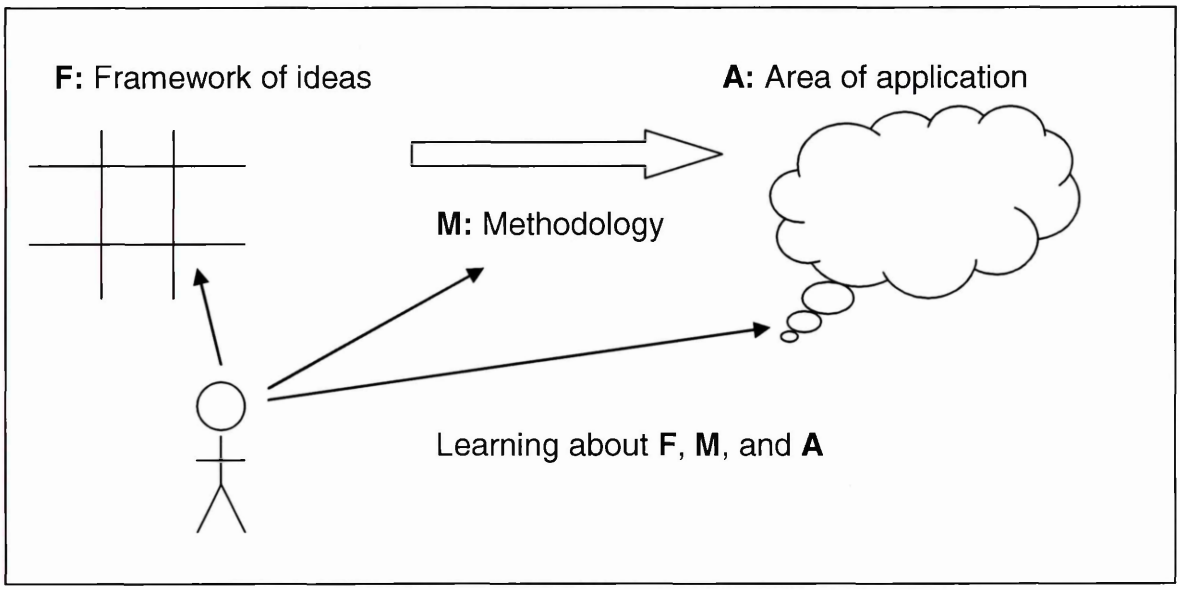
practice, and in ways that will positively impact community regeneration and delivery of useful interactive service channels, that are transformative in citizen interactions with Government.

It is clear from early evidence (Schuler, 1996) that the simple availability of Community Technology and services is no elixir for government interaction with citizens and citizen-citizen interactions in their communities. Schuler (2005) reinforces this point with his commentary on the existence and impact of 'philosophical inertia' in the Seattle Community Network.

3.2 Theoretical Frameworks in Information Systems Research

Checkland (1991) has usefully identified the process of research into the categories of Framework, Methodology , and Area of Application (shown in figure 3.1), with regards to the framework **(F),** it is commonly accepted that the development and use of a theoretical basis is helpful as a foundation and guide for the inquiry. When linked closely to the research questions, a framework is useful as a basis for data gathering and analysis strategy. It is important to note that in the context of this research the framework is conceptualised as a "learning device" or as "scaffolding" (Walsham, 1995) for the exploration of events that will lead to insights into the case under investigation. It has not been the intention to develop a rigid analytical framework in a positivist sense but to provide a guide to empirical work in the sense suggested by Walsham (1993).

Figure. 3.1 The Elements of Research



(source: Checkland, 1991)

This research builds upon an analytical framework that can be tested and enhanced following empirical work. Iterative feedback allows the framework to be revised accordingly.

Davis (1991) refers to the theoretical framework as a "model". This term has rationalistic connotations and suggests an instrumental treatment of data that is "run through the model" or "tested against the model". However, it is of interest to consider Davis's categorisation of models. Davis asserts that a model is required so that the initial exploration can be started and goes on to identify three approaches to the use of models in research inquiry. The first approach is deductive in nature and the other two approaches inductive in their treatment of models. According to Davis (1991) the *scientific approach* moves from model to hypothesis to the beta tested model, the *grounded*

theory approach moves from data to explanation to model, and the *exploratory* approach takes a model formed as a basis for inquiry from indications in the relevant literature. The model is used as an initial basis for explanation and enhanced accordingly.

In the scientific approach the model is intended to be a model of *the process* under investigation. This assumes that the process (or system) is tangible and objective and exists physically within the world. This rationalistic view of models is commonly adopted in scientific inquiry and has largely been proved as ineffective in the social sciences (see section 4.2 Research Paradigms in IS, for a more detailed discussion). The Blackpool case study research was based on an *interpretivist* approach to understanding the views of the research subjects. The process is viewed as being socially constructed in the fact that multiple perspectives and interpretations exist, and need to be appreciated and understood. The results are thus subjective, comprising the researcher's interpretation of the views and beliefs of the subjects. Thus the scientific approach to modelling can be ruled out in this case.

The grounded (Glaser and Strauss, 1967) and exploratory approach (shown for example in Walsham, 1993) is next to be considered. The grounded theory approach is considered valid in its inductive treatment of models and theory building from the data. However, it was significant that there were strong thematic indications in the literature review that pointed towards an exploratory approach. The grounded approach also prescribes systematic analysis of research data, often using computer systems for this purpose.

The reductionist formal structured method suggested by Glaser and Strauss to identify themes from field notes seems inappropriate, given the complexity of the survey data.

The exploratory approach takes indications in the literature that enable the formation of an initial exploratory framework to begin investigation into the process. This research adopts this strategy and thus builds an initial framework for the investigation. However, as pointed out in the introduction, there has been an on-going dialectic between the framework, the researcher and the case study data. Thus the formation of the framework evolved over time influenced by the indications in the literature review, discussion with contacts in Local Authorities, and changing themes and events in the Case Study over time.

Review of the theories consulted in the development of the framework follows below, which culminates in an attempt to integrate the theories in order to provide an analytical framework.

Firstly, literature around culture and cross culture is reviewed followed by theories concerned with power in organisations. Finally, theories that take into consideration the additional dimensions of 'people and technology' are discussed with regard to their usefulness in providing explanatory mechanisms for investigation into the process.

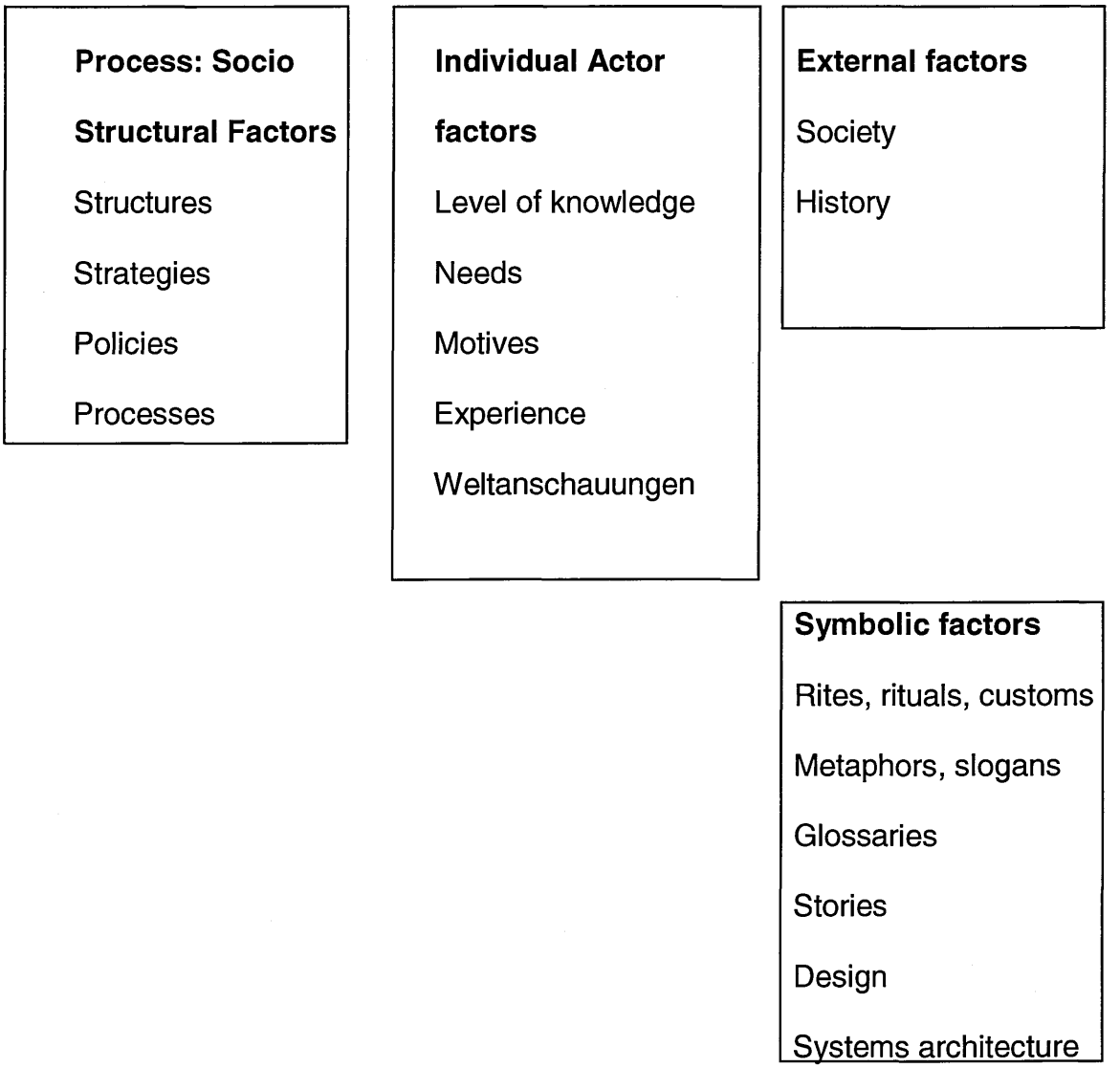
3.3 Culture and Organisations

Culture has come to be a popular subject in the business and academic management literature (Peters and Waterman, 1982, Schein, 1985). Pettigrew (1979) is credited as the first theoretician who identified "organisational culture" and in effect brought the field of anthropology into the discipline of management. Interest in the importance of culture has come to be of interest to IS researchers, for instance Robey and Azvedo (1994) provide a comprehensive review of the significance and importance of cultural analysis of the organisational consequences of information technology. Avison and Myers (1995) argue for the inclusion of anthropological concepts in IS culture research. Boland (1985, 1987) looked at the sense making process in information systems development. Feldman and March (1981) analysed information in organisation as embedded in social norms and Walsham (1993) provides an interpretive approach to information systems from a cultural perspective.

However, culture is recognised as being a "slippery" notion that is difficult to tie down and significant differences exist as to its conceptualisation. This is largely due to different views on culture and whether it can be "managed" in a rationalistic sense, or whether it is much more of a "spiritual" phenomenon. Smircich (1993) provides an indication of the broad conceptualisation of culture as being something an organisation *"has"* and as something an organisation *"is"*. A lot of work on culture from both the populist (Peters and Waterman, 1982) and academic literature (Schein, 1985) concentrates on culture as something an organisation *has*. Avison and Myers (1995) argue

that this is still the prevailing view in the IS area. Peters and Waterman (1982) were influential, but concentrated on manipulation of culture (so called "culture management") to contribute towards business success. The text's major premise, that of achieving control of values and beliefs, ceremonies and symbols, etc., in a rationalistic manner was subject to extensive criticism. In the IS area, Davis (1991) draws on Allaire and Firsirotu's (1984) work on culture in organisations and provides a "model" for analysing culture. The categories are summarised in Figure 3.2. These criteria are characteristic of approaches to understanding culture as something an organisation *"has".*

Figure 3.2 Davis's Model of Cultural Analysis.



(source: Davis, 1991)

This model (figure. 3.2) provides clear criteria for investigating and critiquing the implementation of Information Systems from a cultural standpoint that Davis (1991) achieves in a case study of the British Army. Although this proved interesting and facilitated the investigation, the work succumbs to the same criticisms as Peters and Waterman (1992) regarding the reduction of

culture to a set of independent variables implying an instrumental treatment, a simplistic and rationalistic bias, with a reduction of culture to various categories at various levels.

Avison and Myers (1995) call for a rejection of this narrow definition of culture as "cultures are contested, ever changing and emergent, they are invented and re-invented in social life". Morgan's (1986) conceptualisation of culture views organisations as "culture producing phenomena" as opposed to them "having a culture" which resists by implication any means of instrumental culture "management". Morgan's view of culture is less prescriptive than the view of such as Davis (1991) and Peters and Waterman (1982) and more in line with the critical reflective standpoint suggested by Pettigrew (1985). For Morgan, culture is viewed as a "metaphor" and metaphor analysis has emerged as a powerful method for organisational analysis. Lakoff and Johnson (1980) point out that in all aspects of life, not just in politics or love we define our reality in terms of metaphors and then proceed to act on the basis of them. We draw inferences, set goals, make commitments and execute plans all on the basis of how we structure our experience, consciously and unconsciously by means of metaphor. Morgan (1986) describes metaphor as often regarded as a device for embellishing discourse, but points out that its significance is much greater than this. The use of metaphor implies a way of thinking and has relevance for understanding organisation and management.

Organisations, Morgan asserts, are complex and paradoxical phenomena that can be understood in many different ways and thus metaphors are a "way of seeing and a way of not seeing", like lenses that reveal particular aspects of an organisational situation but exclude others.

Morgan encourages a conceptualisation of culture that is soft, almost spiritual in nature, but this does cause a problem with regard to the pragmatic usefulness of the approach for analysing empirical work. However, Avison and Myers (1995) point out that most work on IS culture concentrates on the instrumental treatment and this is an over-simplification. A view of organisational culture as being something an organisation *"is"* reveals many sophisticated issues that are sometimes not revealed by instrumental treatment. Morgan (1986) provides several examples to illustrate this.

Analysis through metaphors encourages researchers to try and perceive the organisation beyond the instrumental treatment of culture. However, the major problem with this approach is that the construct becomes too all encompassing and complex to be useful (Robey and Azevedo, 1994).

In arriving at a coherent approach to cultural analysis for this inquiry, accepting Avison and Myers critique, it is generally recognised that there is a need to identify distinctive features of culture which can be used as a basis for inquiry and these criteria are supplied by Allaire and Firsirotu (1984), articulated in the IS domain by Davis (1991).

The work of Morgan (1986) could be taken as representative literature from the *"is"* view of culture. As previously discussed the problem with Morgan's approach is that culture becomes a fuzzy notion, difficult to grasp and analyse and in the case of Allaire and Firsirotu (1984), Davis' (1991) case study demonstrates an overly instrumental treatment of culture resulting in systematic treatment.

It was considered important to identify the importance of sub-cultures in analysing issues of multiple meanings, differing Weltanschauungen and with regard to issues of power. It was also considered important to identify the critical effect of shared meanings in guiding organisational action at both an individual and corporate level accepting that culture can be a powerful unifying force. The "is" view of culture can offer many useful insights to the inquiry drawing on ethnographic techniques as briefly described above.

It was therefore decided to attempt to compromise between the two views of culture. Avoiding Avison and Myers' (1995) accusation of "gross oversimplification" when viewing culture as a set of independent variables, it was decided to attempt to combine the two views. Allaire and Firsirotu's (1984) general categories were utilised in combination with Morgan's (1986) articulation of Smircich's (1983) perception of culture.

Difficulties highlighted by Heeks (1999), as a gap between *vision concept* and *organisational capability* is compounded when two cultures exist. Due to this complicating factor neither approach to understanding culture was found to be

adequate or appropriate when teams in different and disparate public-public, or public-private sector organisations exist, using different and sophisticated ICTs.

This was the case in particular involving different cultures of Local and Central government departments when seeking collaborative working.

3.4 Theoretical Frameworks for Analysis of Community Culture

Culture of communities has direct impact on community portal development and affects the approach, design, ethos and sustainability of a portal. In considering theoretical frameworks appropriately relevant to this community portal research, various options were considered as potentially suitable.

Schuler (1996) suggests Meliorism as relevant to community network analysis. This is the doctrine that there is a tendency throughout nature towards improvement, and the belief that the world can be made better by human effort. Having considered further work e.g. Gygi (1995), and Bishop (1994), this has also been discounted as an unsuitable approach for this research exercise, due to subjectivity and lack of metrics.

References on Regime theory have relevance to understanding urban politics and how and under what conditions different types of governing coalitions

emerge, consolidate and become hegemonic (leadership, especially of one state of a confederacy); and how they devolve and transform.

Diffusion of Innovation theory (Rogers, 1956) offers an alternative view of how technology diffuses over time in a predictable manner, but this has been discounted as not a good fit with this research exercise.

The theoretical approach of actor-network theory has been considered. Stolterman's (1999) paper relate to the impact and effect of email systems. Central concepts and dynamics are explained in papers such as Felix Stalder (1997) (University of Toronto), and John Law (1992) (University of Lancaster). Importantly Stolterman's view is that the attempts to apply actor-network theory may lead to a new and different way to approach systems consisting of both *social* and *technical* Actors. Stolterman feels that in the debate on creation of sustainable virtual communities the Internet is studied as if it is no longer changing. The underlying technological structure and functionality is not considered to be a result of *design*, and therefore not something to *re-design*. Instead cyberspace is very often viewed as a new kind of nature – there to be *discovered* and *explored* in the same way the real world has been explored and studied.

Stolterman asserts:

> "The Net and Virtual Communities are not something only to explore. It is still very much a question of design – of forming technology to support our needs and dreams."
>
> (Stolterman, 1999)

The concept of 'designing' rather than 'discovering' is a key factor differentiating positivist and interpretive theoretical frameworks, and this argues against a purely scientific positivist analysis. The actor-network approach therefore appears to be of some relevance in this domain of community networking.

3.4.1 Actor-Network Theory - The key theoretical concept is inscriptive behaviour (as in words inscribed on a monument) (Ackrich 1992), and the way that a technology facilitates and restricts behaviours. This concept has been developed and used within the framework of actor-network theory, as presented by Latour (1975), Callon (1986), and Law (1992), among others.

The idea is that all technological artefacts create a space of possible actions. It is not possible to use the technology in every possible way we want to or can imagine. The technology restricts and enables certain behaviours. This is done in ways that sometimes are visible and maybe easy to understand, but sometimes very subtle and easily missed.

Stolterman (1999) contends that technology creates a space of possible actions that in many ways totally changes the preconditions for any social or societal use. He concludes that the net as it presents itself to us today, is designed, and thereby is always possible to change. Secondly, we have to accept that all social aspects of the use of the net must be related to the structure, function and appearance of the technology.

Stolterman feels that the study on how inscriptive behaviour creates spaces of possible actions to the user of a particular technology is a question of careful analysis. In the same way as a researcher has to unfold the structure and processes in a traditional case study, it is necessary to – in a very detailed and cautious way unfold the inscriptive behaviour in the technology. This unfolding must be done based both on a certain level of knowledge of the technology itself and on a suitable conceptual framework. Bruno Latour (1987) and his followers have created a philosophical framework that can be used for this kind of study.

Actor-network theory proceeds from a radically different set of ideas, and is concerned with the building of facts, with a notion of 'black-boxes'.
Facts are created across time and space from chains of weaker to stronger associations of human and non-human alliances, rather than an approach of waiting passively to be uncovered, discovered, or invented. This occurs by virtue of the relative convergences of their respective interests. These 'lash-ups' of heterogeneous actants (Law, 1986), at first "an assembly of disorderly and unreliable allies", slowly evolves into "something that closely resembles a black box" (Latour, 1987, pp130-131). Each new ally strengthens the chain, making the box blacker, the fact harder, as the network lengthens across time and space. But this is not a description of some mysterious diffusion process. Each actant translates and contributes its own resources to the shape and ultimate form of the emerging black box. The problem for those engaged in the building of facts therefore, is how to enrol and control the others.

Latour outlines a number of strategies for enrolling others in the creation of a black box:

- to appeal to the other's explicit interests:
- to get the others to follow our interests;
- to suggest a short detour (this is particularly strong when their road is blocked);
- to reshuffle interests and goals by tactics such as inventing new goals, inventing new groups; by becoming indispensable to the others.

(Latour, 1987)

To build a black box others have to be enrolled so that the 'embryonic fact' is appropriated and spread across time and space; once enrolled the others need to be kept in line so that how the 'fact' is translated remains recognisably the same, hardening and blackening as the network lengthens. But the theory stresses that the control of any individual actor over this process is necessarily limited; translation inevitably entails metamorphosis and loss of sovereignty, despite strenuous authorial efforts to retain control.

3.4.2 Diffusion of Innovation Theory - Rogers (1983) defines diffusion as the process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion of Innovation Theory, (Rogers, 1956) has evolved over many years and so represents a strong body of ideas that have had considerable influence on a number of disciplines, including studies concerned with the adoption of Information Technologies (IT) (Fichman, (1992), Levine, (1994).

In essence, diffusion theory depicts technology transfer as a process in which four main elements, including three time factors bear on the decision to adopt or to reject a particular technological application or device. The four main elements are:

- Innovation – an idea, practices, or objects that are known by an individual or other unit of adoption.
- Communication Channels – the means by which messages get from one individual to another.
- Time – the 3 time factors are:
    - Innovation-decision process.
    - Relative time with which an innovation is adopted by an individual or group.
    - Innovation's rate of adoption.
- Social system – a set of inter-related units that are engaged in joint problem solving to accomplish a common goal.

These sets of factors pertain to the attributes of individual recipients (e.g. their attitude towards change), the characteristics (norms, values, culture) of the

social system that they inhabit, and features intrinsic to the technology itself (complexity, trialability, etc.). Certain configurations of these factors are held to dispose the adoption process to a felicitous outcome, while other juxtapositions are seen as less favourable. Rogers thus provides a framework that can be used for predicting the likely outcome of a transfer initiative or for performing a post hoc interpretative analysis. In essence, his framework is an example of what is known in IS research as a factor model (Newman & Robey, 1992), in which the analysis hinges on determining the 'settings' of certain key variables. Once these are known, the outcome follows with causal inevitability.

However, diffusion is only one way of thinking about IT innovations and it is suggested that Actor Network theory, through the concept of translation (Law, 1986, Callon, (1986), Latour, (1987, 1993) provides a valuable counterpoint to diffusion theory. Although Diffusion of Innovation theory is a way of descriptive representation of processes and stages in the adoption process for innovatory take-up of new, or existing, technology, it is posited that Actor Network theory offers greater understanding of the mechanisms involved in technology transfer.

The rate at which an innovation spreads through members of its potential adopter society is influenced by characteristics pertaining to the innovation itself, characteristic of the adopter, as well as other factors such as the culture of the organisation, and the influence of opinion leaders. Characteristics of the innovation include relative advantage – the degree to which it appears

superior to existing products, compatibility – the degree to which it matches values and experiences of individuals in the community, complexity – degree to which it is relatively difficult to understand or use, trialability – the degree to which an innovation may be experimented with on a limited basis and observability – the degree to which the results of an innovation are visible to others. Characteristics of the adopter include social status, level of education and degree of centralisation or de-centralisation, while opinion leader influences include their technical competencies, social accessibility, the degree to which they conform to the 'norms' of the social system, and the degree to which they support or reject the innovation.

Communication channels are the means by which innovations are transferred from one person or group of persons to another or others. They may include mass media as well as interpersonal, face-to-face methods of exchange.

Time affects the diffusion process in three ways: First, in the innovation-decision process, that is the steps through which the adopter passes from first knowledge of the innovation to the decision to adopt or reject. Second, the degree of innovativeness of the adopter is purported to equate with the degree of earliness (or lateness) that individual is prepared to adopt the innovation relative to others in his or her social system. Third, the rate of adoption, or the number of adopters in a social system within a given time period.

Social systems are communities engaged in joint problem solving. An important facilitating factor according to Rogers, is the degree of 'harmony' between individuals, or the context to which they share the same or similar interests, since it is argued that this makes for better, more effective communication.

3.4.3 Structuration theory principles - Giddens (1984) characterises two major schools of sociological enquiry:

- Those predominantly concerned with *structure,* and
- Those predominantly concerned with *agency.*

Other traditions in sociology (hermeneutics, phenomenology) have concentrated on the human agent as the primary actor in, and interpreter of social life.

In Giddens' account, these two traditions are incompatible with each other until the advent of his theory, showing how the knowledgeable actions of human agents discursively and recursively form the sets of rules, practices and routines, which over time and space constitute structure.
This is the process of 'structuration'.

Giddens defines structure as 'rules and resources recursively implicated in social reproduction; institutionalised features of social systems have structural properties in the sense that relationships are stabilised across time and

space'. Structure can be 'conceptualised abstractly as two aspects of rules - normative elements and codes of signification. (Giddens, 1984 pp334-339).

Structure - 'exist only as memory traces, the organic basis of human knowledgeability, and is instantiated in action' (Giddens 1984 pp 377).

Structure refers, in social analysis to:

> 'the structuring properties allowing the 'binding' of time space in social systems, the properties that make it possible for discernibly similar social practices to exist across varying spans of time and space and which lend them a 'systemic' form. To say that structure is a 'virtual order' of transformative relations means that social systems as reproduced social practices, do not have 'structures' but rather exhibit 'structural properties' and that structure exists, as time-space orienting the conduct of knowledgeable human agents'
>
> (Giddens, 1984 pp 17).

Agency - Human agency, in Giddens' formulation, is the 'capacity to make a difference' (Giddens 1984 pp 14), which he also calls 'transformative capacity'. Power involves the exploitation of resources. 'Resources (focused by signification and legitimation) are structured properties of social systems, drawn on and reproduced by knowledgeable agents in the course of interaction' (Giddens 1984 pp 15).

Resources are 'of two kinds: authoritative resources, which derive from the coordination of the activity of human agents, and allocative resources, which stem from control of material products or aspects of the natural world' (Giddens 1984). Actions have intended and unintended consequences.

The stratification model - Purposive human action occurs as a '*durée*' a 'continuous flow of conduct' (cf Vickers (1965) 'flux of interacting ideas and events' (lebenswelt)) in time space. The stratification model concerns the agent's reflexive monitoring of the *durée* (like Vickers (1965) 'appreciative system'). Following Erikson (1984), Giddens formulates a conception of day-to-day living as involving 'an *ontological security* expressing an *autonomy of bodily control* within *predictable routines*' (Giddens 1984 pp 50). Encounters are sustained via discourse (Giddens 1984 pp72-3).

The duality of structure. - Giddens recasts the two independent sets of phenomena (dualism) of structure and agency as a 'duality' - two concepts which are dependent upon each other and recursively related. 'The structural properties of social systems are both medium and outcome of the practices they recursively organise' (Giddens 1984 pp 25).

Social structure and human interaction are broken down into three dimensions (solely for the purpose of analysis) and the recursive character of these dimensions is illustrated by the linking modalities. Thus, as human actors communicate, they draw on interpretative schemes to help make sense of interactions; at the same time those interactions reproduce and modify those interpretative schemes that are embedded in social structure as meaning or signification.

Structuration is therefore the process whereby the duality of structure evolves and is reproduced over time space. Agents in their actions constantly produce and reproduce and develop the social structures, which both constrain and enable them.

> 'All structural properties of social systems are the medium and outcome of the contingently accomplished activities of situated actors. The reflexive monitoring of action in situations of co-presence is the main anchoring feature of social integration'
> (Giddens 1984 pp 191).

In Gidden's view 'a 'structural approach' to the social sciences cannot be severed from an examination of the mechanisms of social reproduction'.

Giddens distinguishes between common sense, the rationale behind everyday action, and 'mutual knowledge,' shared sets of beliefs about the social world.

Those beliefs have a dynamic relationship with social theory via the double hermeneutic, and separate the domain from that of natural science. Social theory has thus a more transitory character than its natural science counterpart, which acts on phenomena that do not have the ability to understand the theory.

It should not be inferred that Giddens thinks that social theory is less important or useful than that in the natural sciences.

Structuration theory - contemporary critique

A central reservation about structuration theory in the critique of other social theorists has centred on the 'conflation' of structure and agency. Conflation 'concerns the problem of reducing structure to action (or vice versa) and the [consequent] difficulty of documenting an institution *apart* from action' (Barley and Tolbert 1997).

Archer (1996) argues that conflating structure and agency weakens their analytical power and elides the distinction between Lockwood's original conceptions of 'social' and 'system' integration.

The question of substance is: 'why do some forms of social reproduction succeed and become institutionalised, and others do not?' Why, for instance, should the communist societal model in Eastern Europe give way to democratic capitalism?

Most of this critique is at the ontological level of the internal logic of the theory of structuration. The lack of concrete empirical example in his own work, together with its abstract conceptual focus similarly offers few clues as to how to proceed in the everyday world in the gathering of useful understanding, and its reflection back into the world of practice.

Whittington (1992) concludes that Giddens' influence on the field of management studies is 'substantial but lopsided.' His criticism is that the conception of managerial agency resulting from this perspective is skewed

and limited. The institutionalist 'recognition of the interplay between capitalist structures, and structures of gender, knowledge, state and ethnicity' taken together with his study of Giddens' empirical writings, including those on class structuration (Giddens, 1973) lead him to advocate a much broader view of managerial agency. Managers are viewed as part of many social systems, not just a capitalist system of organization, with many forms of rules and resources to call upon, and many available structures that both constrain and enable their actions.

Structuration theory and IS research

Structuration theory has been adopted by a number of writers in the IS field. Checkland (1981, 1990) *operationalised* systems ideas to provide methodological help for management problems.

Adapting structuration theory to the domain of IS/IT. The most sustained and well articulated attempts to theorise aspects of the IS field using structuration theory come from Wanda Orlikowski. In Orlikowski and Robey (1991), the tenets of structuration theory are applied to help understand the relationship between IT and organizations. A model relating human actors, IT and institutional properties is provided, together with explanation of Giddens *modalities* as enacted via the medium of IT, and a 'framework for investigating the interaction of human actors and social structure during IS development'.

3.4.4 Diffusion or Translation (Actor-Network)? - Diffusion theory suffers from a number of weaknesses. There is for example the 'Schumpeterian thesis' which suggests that capitalist-driven organisations have little interest in transferring technology, or the necessary skills, knowledge or information to support it (Attewell, 1992, p.6). Other problems acknowledged and recognised by Rogers, include 'pro-innovation bias', and the troublesome concept of 'blame' (individual or system).

In addition, further problems are recognised from the separation of society (people) and technology (things), which are inherent in models of diffusion. A key problem is the notion that facts (and machines) occupy an existence which is somehow independent of humans, through which they are thereby able to diffuse, reproducing themselves through their own velocities and trajectories, or what Latour calls vis inertia (1987, pp.132-136). The implication is that once the 'fact' (discovery or invention) has been pointed out to people, it is simply (more or less) a matter of time before everyone recognises it as being obvious. It had existed, at least in principle, all along, and was simply waiting to be uncovered. Those who refuse to acknowledge these facts are resistors (with subsequent attendant notions and theories of resistance) who, it is claimed are often protecting a 'vested interest' of some description.

This notion about facts leads to another problem for diffusionists, and that is their need for geniuses; discoverers and inventors who are in some way superhuman; who appear to single-handedly uncover hidden truths (facts), or

who invent new technologies (innovations) for the benefits of the rest of an intellectually inferior humanity or mere mortals. Actor-Network theory has no need for people of such special status, recognising that they are merely links in a longer chain.

McMaster (1997) argues that the Rogerian framework of 'Diffusion of Innovation' seems to be more an exercise in factor analysis; a search for causal factors that explain why some technology transfers are successful and others failures. The factors are then operationalised such that they can be tested through experimentation and their predictive ability assessed. As such, diffusion theory is firmly rooted in 'high modernism' and a desire to make links between cause and effect. The Actor Network theory approach is concerned with the highly-situated, mundane translations that arise in actor networks rather than the politics of explanation, "belief in causes and effect is always, in some sense, the admiration for a chain of command or the hatred of a mob looking for someone to stone" (Latour, 1998, p.162).

Diffusion of Innovation theory therefore is hampered by its abstracted and generalised approach and therefore is probably of little value to this research in that although it might explain success and failure of a community network project there is little evidence that it could provide real predictive power.

Actor Network theory on the other hand requires that we throw away our naïve belief in *cause* and *effect* (i.e. factors) and focus on understanding how actor-networks (people and things) are created, strengthened and weakened.

McMaster (1997) argues for IS research that documents the translations in all their glorious messiness and irrationality, rather than in sanitised accounts created after the fact.

There is merit in retaining a view of actor-network theory throughout the research process to be undertaken, but it has not been a primary tool for analysis in this research.

3.5 Interim Summary

The chapter has so far considered a range of theoretical frameworks and Checkland's (1991) Elements of Research. Culture issues are considered to determine their effect on IS development.

Theories are considered that are relevant to:

- Power in Organisation, and
- People and Technology

These include consideration of:

- Meliorism
- Regime theory
- Diffusion of Innovation theory
- Structuration theory
- Actor-Network theory

Actor-Network theory is the closest fit to this research exercise.

3.6 Power in Organisations

The previous section identified that political aspects were likely to be significant in any inquiry into the process of information systems development for community networking. Theoretical insights provided by a cultural analysis (sub-groups, multiple meanings, etc.) would not be sufficient to delve into the deeper political dimensions of an inquiry into the process of community network portal development. It was therefore decided to select an appropriate framework for political analysis.

One of the first contributions to discuss power and politics in information systems development was Kling (1980) and Markus (1983). However, political analysis has never reached the mainstream in IS research, partly because power and politics is another "slippery concept".

Identification and analysis of power in organisations is a difficult concept to tie down, with differences of opinion as to its definition and analysis. This has resulted in a proliferation of different definitions being used by writers with little, if any, agreement between them. Confusion exists between power and similar terms such as authority, influence and domination (Nagel, 1975). Pfeffer (1981) offers a coherent delineation of *power* and *politics* which is helpful in grasping the notion of power:

> "if power is a force, a store of potential influence through which events can be affected, politics involves those activities or behaviours through which power is developed and used in organisational settings. Power is a property of a system at rest; politics is the study of power in action".
>
> (Pfeffer, 1981, p7)

This obsession with definition is considered by some authors to be a "straw man". Hardy (1985) for instance suggests that attention should be directed to asking what power comprises, and how it produces results rather than how neatly it can be defined. Narrow definitions thus constrain and restrict the empirical work and therefore following Hardy this research adopted a broad definition that encompasses terms that express various forms of power and politics.

Since Kling's initial work, power issues have been of interest to the IS community for some time. Walsham (1993) uses Morgan's (1986) political metaphor to good effect in analysing several case studies of the effect of implementation of IT. Markus (1983) presents a study of the power and politics involved in the implementation of a management information system. Introna (1997) draws on the work of Foucault (1979) and Clegg (1979) to provide a thoughtful analysis of the power issues surrounding the collapse of the London Ambulance computer-aided despatch system. Myers (1997) draws on a critical social theory to analyse hidden agendas, power and managerial assumptions in IS development.

Analysis of power can be traced back as far as Hobbes and Machiavelli, but contemporary theory is of most value especially where it has been applied to IS. Foucault's ideas and studies are valuable in understanding the nature of power. These are evident in arguments about the digital divide (Capurro, 1996).

The research required a framework that would be wider in scope than decision making alone.

The next section will discuss the critical elements of these considerations of culture and power, and summarise the justification for the various proposed strands in the theoretical framework.

3.7 Culture and Cross Culture

Schein (1985) points out that culture at the organisational or national level provides an interpretive context that enables members of a culture to make sense out of their surroundings. Behaviour is guided by culture and because it is acquired through early socialisation, people are often not completely aware of the effect of culture on their actions. Often this awareness of the cultural context is heightened when a person moves outside of his or her own culture and is then confronted by different assumptions (Robey and Rodriguez Diaz, 1989 p231). Participation in multi-partner IS projects (e.g. Local Authority – Private Telco) help to bring alternative cultural contexts to interact with each other, highlighting the need for research on the impact of cross

cultural issues on IS development and implementation. This need has been recognised as vital by a number of IS researchers, for example Kumar and Bjorn Anderson (1990).

Different authors have discussed various elements of culture and their influence on the processes of information systems development and use. Hunter and Beck (1996) identify differing skills of analysts in different cultures. These different studies, in varying ways, emphasise the point that when the process of information systems development involves development staff from different backgrounds we need to take issues of organisation culture seriously into the research framework.

3.8 Power and Politics

Another key theoretical area concerns the impact of power on IS development and implementation. Power is conceived by Hardy (1985) as the ability to affect the behaviour of others in a conscious and deliberate way, encompassing concepts of coercion, manipulation, authority, persuasion and influence. While the implication of power in IS has been under research for some time (for example, Markus, 1983) little or no research on information systems development in the context of community informatics; community network; or, community portals, has specifically addressed the issue of power. There are studies that have addressed the issue of power (e.g. Kern & Silva, 1998), but these issues remain largely unexplored in more community portal development related contexts.

This study has attempted to explore cultural and power issues in conjunction, in order to examine the impact of culture and cross-cultural issues of power relations, and the impact on development of a community network and portal.

3.9 Synthesis of Theory

Meliorism, Regime theory, Diffusion of Innovation theory, Structuration theory, and actor-network theory outlined in this chapter represent an eclectic mix of individual theories. Each have some relevance to a research study of information systems, but in this exercise it is appropriate to probe and investigate the factors surrounding people and technology issues in this context of community networking and development of community portals.

What can be seen from the literature review in Chapter 2 is that a research study of community portals is more than a technological investigation. The role and relationship of people and technology is deemed significant (Mumford, 1993, 2003).

The range of theories described in this chapter each have positive aspects that can be seen as beneficial to an investigation of community portals, but due to the complex nature of both the technological and social (people) issues there cannot be one theory that enables an holistic consideration of this subject. Alternatively, elements of different theories can be applied to address specific issues identified in development and deployment of portals and these

are used for explanation. Actor-Network theory is the closest fit and this is used predominantly as a framework foundation.

Walsham (1993) offers an interesting use of structuration as the 'linkage' between the context and process axes of Pettigrew's (1985) context/process model of organisational change. The premise is that Pettigrew's *context* can be aligned with Gidden's view of structure, and that *process* can similarly be taken as akin to human interaction, and the concept of structuration links the two theories. Context-Process analysis is described in section 3.15.

3.10 Research Approach

The chapter continues to describe the research approach and procedures that have been adopted in the research inquiry.

Analysis of the Community Portal UK Survey described in Chapter 5 required an analysis method that enabled a holistic, in-depth examination of the process of community network portal development, including the political and social drivers.

Empirical studies that collect data of the nature described above are broadly classified as "interpretive case studies" (Walsham, 1995) and there is an increasing body of work in the IS literature based on this approach (for example Boland and Day, 1989, Walsham, 1993). This approach combined with contextualism (Pettigrew, 1985, 1987, 1990) over time has formed the

basis of the research methodology for the inquiry and the sections to follow will discuss and justify this decision.

3.11 Research Paradigms in Information Systems

The work of Zuboff (1988) has been a major influence on the decisions regarding research methodology. A good starting point is offered when examining issues of research philosophy:

> "Researchers must have a theory of reality and of how that reality might surrender itself to the knowledge seeking efforts. These epistemological fundamentals are subject to debate but not to ultimate proof. Each epistemology implies a set of methods uniquely suited to it and these methods will render the qualities of data that reflect a researcher's assessment of what is vital".
>
> (Zuboff, 1988).

The information systems research community generally accepts the existence of two discrete major research paradigms. Galliers has classified research methodologies into the categories of "scientific" and "interpretivist" (Galliers, 1985, Galliers, 1991). Although this may be useful as a general guide, it represents an oversimplification. Klein and Myers (1999) identify a third paradigm drawing on critical social theory. They also identify that interpretivist research can be based on hermeneutics, postmodernism, or deconstruction. Archer (1988) also provides more sophisticate delineation and identifies "positivism" of the scientific paradigm, "non-positivism" in which facts and values are inseparable and "normativism" in which scientific knowledge is

seen as ideological. Archer also distinguishes between the "external realism" adopted by positivism, "internal realism" (the inter-subjective construction of reality) and "subjective idealism" (each of us constructs our own reality). With regard to specific methodologies, frameworks such as Galliers' lead to pigeon-holing of qualitative and quantitive methods. This leads to misconceptions for instance that interpretivist research can only be undertaken by the use of qualitative techniques. Kaplan and Duchon (1988) have used statistical analyses within interpretivist studies and Klein and Myers (1999) point out that qualitative research can be done in a positivist, interpretive or critical sense. So, by extension case study research can be positivist (Yin, 1989), interpretive (Walsham, 1993) or critical, just as action research can be positivist (Clark, 1972), interpretive (Elden and Chisholm, 1993), or critical (Carr and Kemmis, 1986). It could be argued that Galliers' attempts to categorise and "pigeonhole" has lead to approaches that attempt to rationalise the process of selection of methodologies and techniques. Mingers (1996) for example broadens the categorisation into a "multi-methodology" frame to enable the selection of multiple methods for a given research problem. This approach has been fundamentally resisted for two main reasons. Firstly, rarely would an academic researcher be faced with a research site, or problem, without any idea of which approach or methodology to take. A rationalistic approach to research methodology choice ignores the need to consider the background and preferences of the researcher. At a simple level, positivism and interpretivism imply particular world views which are intensely personal and can go so far as to reflect one's personal attitude to viewing events in one's life.

With regard to methodology selection, there has been has empathy in this research exercise with Jayaratna (1994) although his work refers to IS development methodology, his description of an ongoing dialectic between the researcher, the problem situation, the framework of ideas and the methodology is appealing. Jayaratna's view of methodology, critique, and selection implies it is far from a rational process and reflects Schon's (1983) "swampland" of practice as an on-going struggle to make sense of a research process or intervention. The most interesting recognition of Jayaratna's approach is that the researcher has a "mental construct" which influences interpretation of methodology and has preferences and prejudices. The choice of methodology emerged from being personally "comfortable" with a part of research tradition in IS, the influence of like minded people and subsequent seeking suitable community networks and portals for empirical work.

When all that is said, it is necessary to consider the main differences in the major paradigms of practice. Positivism and interpretivism are recognised as paradigms of research theory and practice, and the discussion will concentrate on contrasting these. Critical social theory gains some acceptance as a paradigm of practice within the IS research community and is worthy of commentary. Klein and Myers (1999) point out that IS research can be classed as critical and the main task can be seen as one of social critique, whereby the restrictive and alien conditions of the status quo are brought to light. Critical research seeks to be emancipatory in that it aims to help

eliminate the causes of unwarranted alienation and domination. Critical theorists assume that people can consciously act to change their social and economic conditions, which are constrained by various forms of social, cultural and political domination, as well as natural laws and resource limitations. Example of a limited number of studies undertaken using the critical paradigm include Ngwnyama and Lee (1997) who provide a theoretical study using the results of a previous study on e-mail, and Myers and Young (1997) based on ethnography.

A research conclusion is that to regard critical social theory as a paradigm of inquiry is problematic. Firstly, Wilson (1997) presents a critique of the emancipatory aspirations of those who would research and practice IS within this paradigm, and questions whether any intervention or inquiry can be truly emancipatory. Secondly, critical social theory does not clearly express the characteristics of a paradigm as shown in table 3.1. Few guidelines to practice exist leaving it a vague and woolly concept to follow in real world research. Thirdly, the research exercise examined the instances where critical social theory has been utilised in IS research inquiry, for instance in the e-mail study of Ngwnyama and Lee (1997). When considering this study it is difficult to grasp how the results of the declared critical e-mail study would differ from an interpretivist approach with critical social theory as part of the theoretical framework. In conclusion, it is posited from this research that critical social theory can be used as a means to interpreting research findings as part of a theoretical framework but as a paradigm of inquiry it is incomplete.

Therefore, the discussion will continue considering the positivist and interpretivist paradigm.

Walsham (1995) asserts that the difference between the scientific and interpretivist approaches are addressed formally by considering their epistemological and ontological stances. The differences between the approaches are significant, not trivial, and nor are they bridgeable. They relate to what we think or can say about what the world is; to how we can express or represent this knowledge; to the nature of man himself, and consequently; to how we can properly investigate the world. The differences relate to opposing sets of beliefs on the causes and nature of things and of the principles governing existence, perceptions, human behaviour and the material universe (Flood and Carson, 1992 p272). Table 3.1 below summarises the approaches.

Table 3.1 Key Differences between Scientific (Positivist) and Interpretivist position

Scientific		**Interpretivist**
Realism	*Ontology*	nominalism
Positivism	*Epistemology*	Anti-positivism
Nomethetic	*Methodology*	ideographic
Deterministic	*Human nature*	Voluntaristic

Source: (Flood and Carson, 1992)

3.12 Positivism: The Scientific Paradigm

The success of the positivist project can be linked to that of the Enlightenment Movement. The achievements of positivism and the scientific method are significant; the obvious examples exist in natural sciences such as Biochemistry and Physics, leading to the eradication of major diseases and an enhanced understanding of the Universe. Thus, the philosophical issues and dominance of positivism extend from the historical development of Western society from the Enlightenment and the dominant scientific approach that has been successful in advancing human knowledge, particularly in the natural sciences. Positivism assumes that facts and values are distinct, and scientific knowledge consists only of facts. 'Reality exists independently of our construction of it' (Archer, 1988). As previously stated, positivism is linked strongly to the scientific method, which has four main characteristics: hypothesis testing, reductionism, repeatability, and refutation (Flood and Carson, 1992).

3.12.1 Assessment of the scientific approach to information systems

Positivism and the scientific method have much in common with "hard" systems analysis which has dominated IS development since the 1950's. Checkland's (1981) account of this is interesting as it addresses the weaknesses of positivism in the analysis of society through the failure of systems analysis. The evolution of positivist research methodology like hard systems analysis has involved serious attempts to extend the methods of the natural sciences into complex social domains. An interesting case, which

demonstrates the limitations of scientific approaches, concerns the practice by American RAND Institute systems analysts for planning problems in the USA during the 1950's and 1960's. The methods used were quantitative and were based on rational assumptions about the nature of society. These reductionist methods were seen to be inadequate for the complexity of irreducible human systems. Checkland (1981) tells the story elegantly of the inadequacies of the method for dealing with "soft", "fuzzy", or "ill-defined" problems. The same message of the inadequacies of the technical rationalist paradigm is presented in Ackoff (1979) and Ritell and Webber (1974) who expound on the limitations of traditional operational research and nature of "wicked" problems respectively. The mistaken assumption of a rational, deterministic society, coupled with problems that would not succumb to reductionist treatment has led to "soft" approaches that claim greater insight into soft, human or fuzzy problems. The same assumptions exist within scientific research methodology and thus the same criticisms can be levelled. Glaser and Strauss' (1967) influential argument for theory building through qualitative research rather than hypothesis testing provide an alternative to progress via statistical or experimental hypothesis testing. The reliance on experimental or statistical control as the defining feature of scientific research stems from a desire for objective measurement, free of experimenter bias. Churchman (1979) has strongly attacked this approach:

> "(it is) silly and empty (to) claim that an observation is objective if it resides in the brain of an unbiased observer (instead) one should say an observation is objective if it is the creation of many different points of view".
>
> (Churchman, 1979)

3.12.2 Scientific Research methods in IS

As previously stated, attaching research methodology to paradigm is problematic. However, some methodologies naturally lend themselves to scientific inquiry exclusively, and scientific methods of research still make up the dominant tradition in IS. Laboratory experiments represent the method that encapsulates the full range of positivist world-view. In a laboratory experiment, quantitative techniques are used in a controlled laboratory environment where relationships and variables can be controlled. The aim of the method is to use scientific methods that produce results that can be generalised to the real world. The major strength of this approach lies in that a small number of variables can be studied intensively; the major weakness lies in the validity of the control of the variables and the extent to which the findings are generalisable from an artificial setting. Other scientific approaches include field experiments that extend the laboratory approach into the real world with similar benefits. However, they are often criticised as they over simplify the real world, can isolate variables found, and access is problematic. Scientific approaches to survey methods allow a large number of variables to be studied in snapshots of practice, via questionnaires and/or interviews. Popular ways of handling this are using the telephone, or the internet, with a questionnaire, on a web site, or via e-mail. Large sample sizes provide credibility for generalisation and they do describe real world situations. However, the depth of information gained using these techniques is low and it is often difficult to study contentious issues that require trust, which can only be gained in a long-term relationship. Importantly, they

provide little insight regarding causes or processes behind phenomena studied and it is difficult to eradicate bias in responses and effects of moment it time that the research is undertaken. Response rates tend to be low (Galliers, 1991). Case studies undertaken in a scientific manner have been identified by Yin (1989) and this has lead to wide spread acceptance of case studies as they encourage rigour. Inquiry using case studies in the natural science model of research are assumed to be value free and generalisable by literal and theoretical generalisability. This is accepted by many as offering validity.

3.13 The Interpretivist Paradigm

Interpretivist research consists of relatively fewer research articles than positivist and still has problems receiving credibility with the mainstream IS journals (Orlikowski and Baroudi, 1991). Klein and Myers (1999) point out that interpretivism contains several streams, hermeneutics, deconstruction, and post-modern. The most widely accepted and practised form of interpretivism in IS research draws on hermeneutics and it is this stream which is discussed below. The interpretive paradigm sees man as voluntaristic and is concerned with the way an individual creates, modifies and interprets the world. The ideographic method associated with interpretivist paradigm questions the positivist conception of an external reality and generally adopts an anti-positivist epistemology. The positivist conception of knowledge is hard, real and capable of being transmitted in a tangible form.

Anti-positivist epistemology sees knowledge as soft, subjective, even spiritual, based on experience, insight and essentially of a personal nature.

The interpretivist approach is based on an ontology in which reality is subjective, a social product constructed and interpreted by humans as social actors according to their beliefs and value systems. Interpretivist research attempts to understand phenomena through accessing the meanings that participants assign to them (Orliowski and Baroudi, 1991). Thus interpretive methods of research start from the position that knowledge of human action is a social construction by human actors. Interpretivism is thus an epistemological position concerned with approaches to the understanding of reality and asserting that all such knowledge is necessarily a social construction, and thus subjective. The interpretivist holds that the nature of reality is a social construction by human actors. The researcher attempts to describe, interpret, analyse, and understand the social world from the perspective of the participants. The interpretivist does not rely on hypothetical deductions but rather seeks to understand social process by "getting inside the world" of those who are generating it. Interpretivist research rejects the notion of value free research and is not concerned with repeatability of an explanation. The interpretivist attempts to gain a deep understanding of the phenomena under study and acknowledges their own subjectivity (Walsham, 1993, 1995).

3.13.1 Assessment of the Interpretivist Paradigm

The interpretivist paradigm has been subject to some criticism. Fay (1987) provides a summary:

- Firstly, Interpretivism does not examine the conditions (often external), which give rise to certain meanings and experiences.

- Secondly, there is an absence of the unintended consequences of actions; actions which cannot be explained by reference to the intention of human actors.

- Thirdly, the interpretive approach does not address structural conflict within organisations and society. The perspective cannot address situations where participants' accounts of their actions are inconsistent with their actual behaviour and therefore cannot analyse the means by which actors can be blinkered in self-understanding.

- Fourthly, the interpretive approach neglects to explain historical change; that is how a particular social order evolved, and how it is likely to change over time. Fay (1987 p96) notes that the perspective "systematically ignores the possible structures of conflict within a society, structures that would generate change".

3.13.2 Interpretivist approaches to information systems research

Interpretivist research is commonly associated with qualitative methods but this discussion must be taken alongside evidence from researchers who have used quantitative (statistical) methods in interpretive research (e.g. Kaplan and Duchon, 1988). There are several methodologies strongly associated with interpretivist research in IS but the most commonly adopted are action research and case study methods which will be discussed below. Action Research gives practical as well as theoretical research, and the researcher is actively involved in solving some issue or problem.

There are problems of loss of objectivity and clarity of interpretation as well as problems of loss of control of the theoretical framework in favour of pragmatic considerations. Also it is often wrongly confused with consultancy (Baskerville and Wood Harper, 1996). Interpretivist case study methods (Walsham, 1995) attempt to describe relationships that exist in reality. The method captures reality in greater depth than survey and deals with a larger number of variables.

Interpretive case studies, in contrast to positivist case studies, reject the possibility of an objective account of events. Knowledge is viewed as a social construction. Interpretive case research aims to gain insight and understanding of the social phenomena under study and provide a coherent "story" which would be of interest and use to others. Following Walsham (1995), the story can never be wholly objective and thus is the "researcher's interpretation of other people's interpretations". The method is restricted to a single event and is often criticised over rigour, problems over maintenance of

access, and acquiring similar data from a meaningful number of organisations. Other criticisms include problems of different interpretations of reality by observers and difficulties with generalisation.

Another research methodology associated with interpretivism is 'context-process' analysis (Pettigrew, 1985). This was derived from Pettigrew's work on change in organisations; it provides a combined interpretivist methodology and analysis strategy. Context-Process analysis is not the only approach to contextualist inquiry in IS research.

The other major approach, which could be described as having contextualist characteristics, is Soft Systems Methodology (SSM). The methodology was originally developed as an approach to tackling management problems that were rich in complexity, but it has since been used in information systems design and in IS research (e.g. Lewis, 1994). A significant strength of SSM is in its interpretivist epistemology base, meaning that problem situations are perceived through multiple perspectives. Checkland (1981) recounts his early research into SSM where highly complex problem situations involving many social and political issues often eluded hard systems analysis approaches. SSM users challenge these issues by drawing attention to 'softer' aspects. Techniques such as rich pictures, root definitions, and conceptual models, represent the problem themes and varying Weltanschauungen of the organisational actors. Conceptual models are used as a means for discussion between the participants comparing the real world to the "ideals" created in the model. Later versions of SSM included a political and cultural analysis

(Checkland and Scholes, 1990), which was designed to counter some of the criticism of SSM regarding, in particular, the methodology's attention to issues of power. SSM is well defined and is used extensively by a broad range of management practitioners and consultants. However, for the purpose of this inquiry, it was notable that there was no central problem or set of problems that the researcher was trying to "resolve". The position of the researcher was not of consultant, or action researcher, and expecting organisational participants to engage in dialogue over conceptual models was not intended.

There are many aspects of SSM that would be useful in the inquiry, but the research exercise sought an exploratory approach that would encapsulate the interpretivist spirit of SSM without the "problem solving" emphasis. An approach is needed that will capture multiple perspectives, and pay attention to the cultural and political issues surrounding the evolving process of community portals within the community networking in the UK context. A further requirement is for a methodology that will take account of the impact of context at various levels on the process and vice-versa. These are features of Pettigrew's contextualist approach that also takes account of the bi-directional relationship between the process and context issues at various levels.

Pettigrew's contextualist approach encourages researchers to engage in longitudinal interpretivist research at various levels of analysis thereby uncovering dimensions of a process over time, and at different levels. It could be described as a particular method of conducting case studies, as most results of context process analysis are written up as case studies. The

methodology therefore suffers the same weaknesses but gives a greater depth and breadth of possibilities for research findings. The major weakness of the approach lies in the volume of data that would be produced and the workload for a single researcher in successfully identifying themes and relationships at multiple levels of analysis.

3.14 Justification for Choice of Research Methodology

From figure 3.1 earlier in this chapter the key area of application is *'community portals'* within the framework of *'community networking'*, when applying the research methodology. Checkland (1991) asserts that the research process involves the researcher, the theoretical framework (as articulated earlier in this chapter), and the area of application and research methods in information systems.

The literature review should also be involved in the justification and choice of research methodology and thus the justification will consider each of these elements in turn. The ontological position in examining the process of community portal development in the context of community networking is primarily as a social construction to importantly enable a technical perspective to be revealed. The epistemological stance for investigating the process is an interpretive one. A rationale for this is that over the literature review period there has been growing sympathy with the arguments over the social construction of reality. Further sympathy exists with the interpretivist view of the construction of knowledge and rejects the positivist position discussed

earlier. The view expressed is that the methods of natural science are inadequate to study the complex multiple meanings and perspectives inherent in study of society and human relationships.

In deriving a theoretical framework, the literature review showed that studies which have been concerned with power in organisations have used interpretive case study methodology to good effect, which points to this being an appropriate strategy (e.g. Kern and Silva, 1998, Lacity and Hirschheim, 1993, Walsham, 1993, Zuboff, 1988). The complex interactions and multiple perspectives inherent in investigating issues of power and culture are poorly matched to the scientific approach. Power relations are essentially inter-subjective, complex, and multiple interpretations of events exist. Arguably, there is no objective version of politics.

Investigation into issues of culture and cross-culture are well suited to interpretivist approaches and once again the literature search showed the rich insight that came from longitudinal case study (e.g. Robey and Rodriguez Diaz, 1989). Analysing culture issues is concerned with the analysis of social reality. Cultures are viewed as the result of created meanings between participants who "conspire" to create meanings, social and physical artefacts. Scientific investigation into such phenomenon would be reductionist and restrictive. With regard to investigating issues of cross culture, key writers such as Ein Dor et al (1992) in particular have called for more case studies in the area. Interpretivist case study methodology was used to good effect in studying cross-cultural issues by Robey and Rodriguez Diaz (1989). Studying

differences and effects of social reality and subjective meaning between cultures is not an exact science. People create and attach their own meanings to the world that is made increasingly complex when studying cross cultures. Investigating areas of culture and power require methods where the researcher can build the trust and confidence of the participants over time. Power relations are dynamic and change over time, which calls for longitudinal study.

In this area of application, the process under investigation is highly complex and the research questions are concerned with the study of a process that implies a holistic, exploratory approach. Walsham (1995) indicates that interpretivist case study methodology is appropriate for inquiry into "how" type research questions. Scientific inquiry into the process would require generation of hypothesis and experimental methods inevitably involving reductionism. At the commencement of the research investigation, it was unknown what themes would emerge from the investigation and therefore it would have been inappropriate to generate hypotheses. The process of Community portal development is viewed as primarily social in order to reveal a technical interpretation, and the research aims to capture the complex, dynamic nature of the social phenomena around culture and power issues that are both influential in 'skewing' community portal development and are both context and time dependant. It was therefore decided that investigation into a "real life" set of events would afford the most effective realisation of the research goals and questions. The research attempts to understand the process in practice from the participant's position with respect to their

organisation, team process, and at the level of the individual. Many writers who are involved in interpretive research that take a process perspective suggest the need for a longitudinal design (Pettigrew, 1990, Walsham, 1995). The advantage of this is that it enables the researcher to study the actors' interpretations of the process as events unfold in real time and to gain trust in order to gain deep insight. This is considered to be important in this case, and Table 3.2 summarises the justification for the overall research design.

Table 3.2 Summary of Justification for Research Design

Element of Research	Feature of Research Design	
Researcher	Sympathetic with interpretivist epistemology	Comfortable with interpretivist approach and qualitative methods
Framework of Ideas	Study of power and culture suited to interpretivist research due to multiple perspectives	Longitudinal research needed to build trust, deep investigation and allow themes to emerge
Methodology	Context-process analysis allows holistic emphasis Literature on power and culture calls for more case studies	Influence of context and multiple levels of analysis important to show linkages "How" type research question calls for interpretivist case
Area of Application	Investigation into real life events would realise research questions (use of case study).	Highly complex process context of community portal development, and exploratory emphasis calls for holistic approach.

(source: Walsham, 1993)

3.15 Context – Process Analysis

Context process analysis is an appropriate method for longitudinal research associated with a study of information systems development as community portals and is chosen as an analysis tool for this research.

Walsham (1993) uses Pettigrew's (1990) context-process analysis to good effect. It is argued that interpretive research is not only useful at the exploratory stage but can be used for generalising results.

Context Process analysis was first proposed as an analysis method by Andrew Pettigrew (1985) based around his work on strategic change undertaken at the University of Warwick. This has since been influential in IS research, for instance Walsham (1993) uses Context – Process analysis to good effect in generating several case studies involving implications of implementation of IS.

The strength of Context – Process analysis is in the case studies and guidelines that Pettigrew (1985) produces for those who would use the approach. In context-process analysis the process under investigation (in this case community portals) is considered to be set within the context of an organisational environment that in turn is set within the context of an external environment (legal, social, political, economic, educational and commercial). The *process* interacts with and is constrained by the organisational environment but it is not a fundamental part of the organisational structure itself. However, the environment surrounding the process is shown to define the purpose, constraints and resources available (Pettigrew, 1990).

Context – Process analysis proposes a holistic research process that is comprised of several general characteristics listed below in table 3.3. In this

section, in order to detail research method, an attempt has been made to articulate how these principles would be put into practice in the actual inquiry.

Table 3.3 Features of Context – Process Analysis

- A set of levels of analysis that is clearly delineated, but theoretically and empirically connectable.
- Within each level of analysis a set of categories are specified.
- A clear description of the process under examination.
- A motor or theory to drive the process including the model of the human being underlying the research.
- The contextual variables and categories are linked to the process under investigation.
- The approach recognises that process is both contained by and shapes structures either in the direction of preserving them or in that of altering them. Structure and context are seen as not just barriers to action but as essentially involved in their production.

(source: Pettigrew, 1985)

The levels of analysis to be used in this inquiry are shown in tables 3.2 and 3.3. In table 3.2, the levels of analysis are delineated but the categories are transformed into a series of questions that were used to start initial data collection. Although a preliminary questionnaire survey has been conducted, the categories for investigation are probably not likely to be thoroughly

understood until further into the investigation. Table 3.3 shows how the process of proposed research is likely to take place using Context – Process analysis. A clear description of the process under examination is thoroughly articulated in Chapter 6 (The Case Study).

Chapter 6 will include a description of various structural conditions at different levels of analysis. The "motor or theory" to drive the *process* was discussed in previous chapters as a study of the cultural and political issues affecting community portal development, providing deep insight over time. The model of human being refers to the ontological and epistemological positions described in this chapter and gives linkage of the context to the process (community network development) is achieved in the following chapter (Case Studies.

Structuration theory (Giddens, 1984) is also used by Walsham (1993) when utilising contextualism as a means of linking the *context* and *process*.

Giddens (1984) theory may be seen as an attempt to resolve a fundamental division within the social sciences between those who consider social phenomena as products of human "agents" and others who see them as caused by the influence of objective exogenous social structures. Giddens attempts to reconcile this by positing that agents in their actions draw on social structure while the actions are seen to produce and reproduce the social structure. Structure is not just a constraint on action but also a resource to be deployed. Giddens identifies three dimensions of structure

described as signification, domination, and legitimation. These interact through modalities of interpretative schemes, resources and norms with human action of communication, power and sanctions. Giddens emphasises that structures exist only in the mind and through actions of humans. Giddens is not taking an essentialist or deterministic line, the structures exist as "memory traces" but they retain agency and are able to behave outside of the structural norms. This leads to a view of human beings as being in a constant state of reflexive monitoring of their situation and to the constant potential for change (Jones, 1999). Pettigrew sums this up and argues that there are two major ways in which a contextualist analysis can contribute:

> "First of all by conceptualising structure and context, not just as a barrier to action but as essentially involved in its production, and second, by demonstrating how aspects of structure and context are mobilised or activated by actors and groups as they seek to obtain outcomes important to them"
>
> (Pettigrew 1985b, p37, cited in Whittington, 1992).

The constraining and enabling nature of structure is stressed as the notion of power that is a concern within structuration theory. Another facet of structuration theory that is also of relevance to contextualist inquiry concerns the relevance of overlapping structures and systems. Whittington (1992) expresses this in relation to agency derived from options presented by the overlapping of various structural rules and resources:

> "Managers and managed alike are also people, who, as full members of society, operate in a diversity of systems, and are therefore able to draw upon and respond to a multiplicity of rules and resources. Moreover, the

boundaries of firms cross-cut and overlay the boundaries of many other systems, particularly those of communities and states"

(Whittington, 1992).

The importance of this to a contextualist inquiry into community portal development is highlighted when portal development is split by straddling public and private sector, or local/central government departments. It is arguable in such cases that different cultures exist and therefore function in a way similar to a multi-cultural organisation and this facet of structuration theory offers insight into the social systems and structural bases for action present in such situations. Moving to a concluding discussion and consideration of the practicalities of the method itself, Pettigrew (1985a) describes 6 key steps in adopting the contextualist analysis shown in Table 3.3. These have been applied in the case study of Blackpool, described in Chapter 6.

3.16 Chapter Summary and Epilogue

Based on observations in investigating community portal development the research question have been re-visited the to add a new question:

- What are the cultural and political issues involved in the process of community portal development?

Investigation of community portal development triggered a need to understand the influence of power and culture on such project development. This

chapter described the major reference theories available for a theoretical framework to answer the research questions. The literature search identifies important organisational and management issues involved in the study of community portals, in particular associated with power and politics, culture and cross-culture.

Reflecting on the literature search, (and contextualised in chapter 2), has provided guidance for an initial framework for analysis which comprises use of reference theories of politics and power, culture and cross culture. As free standing theories each has its shortfalls and these are considered within the chapter.

Rather than selecting a single theoretical model an eclectic approach allows a set of conjectures to be made. Applying Checkland's (1991) elements of research model actor-network theory has been utilised to conceptualise, evolve, and construct a 'framework of ideas'; and context-process analysis used as a tool to investigate the case study.

The actor-network approach of 'creating facts across time and space from chains of weaker to stronger associations of human and non-human alliances, rather than an approach of waiting passively to be uncovered, discovered, or invented' (Stolterman, 1999), has been particularly useful in revealing a cultural gap between central and local government in the research undertaken to investigate national and local deployment of community portals. Context-Process analysis has served the investigation well in permitting a flexible

approach, over an extended period of time, to enable an understanding people and technology issues in the case study of Blackpool.

The next chapter presents the methodological approach for this thesis.

4. Chapter Four - Research Methodology

4.1 Introduction

Chapter Three described the major theoretical grounding to the research. This chapter details the research methodology adopted to explain and examine the research questions of the research investigation.

A three-part strategy has supported this research methodology. The components are:

- Interpretive, Participatory Action Research,
- Actor-Network Theory
- Context-Process Analysis

The research method is thus a hybrid mix, crossing between academically oriented work to substantiate or disprove the previously developed theoretical arguments, and an interpretive research approach to provide an insight that informs future development of community portals.

Three research activities have primarily been undertaken:

- Community Portal UK questionnaire survey of Government organisations.
- Follow-up interviews of high-scoring portals as mini-case studies
- Case Study of Blackpool (informed by other mini-case studies).

Stakeholder views (e.g. Central Government Officers, Local Government Officers, Community Residents, Portal Developers, etc.) are gathered as evidence of their multiple perspectives on service requirements and service delivery issues over a longitudinal period (2 year Case Study 2002-2004).

Events and issues evolving in the Case Study during the overall research period 1999-2005 have been analysed using context-process analysis techniques.

4.2 Research Methods

The research enquiry initially explores the existence of community portals, and gathers evidence of their development state and functionality, and continues to an in-depth enquiry into the process for portal implementation.

Due to the complexities of People and Technology issues, an interpretivist approach is adopted.

The rationale behind the hybrid approach for the research methodology is:

- The interpretivist approach (see 3.11) of understanding the process by 'getting inside the world' is applied as a participatory action research mechanism. This is used to investigate the research objectives (answering the research questions set out in Chapter 1), and as such constitutes part of the methodology.

- Actor-Network theory and context-process analysis have been adopted as appropriate methods for participatory action research and applied in a longitudinal research case study exercise associated with the study of information systems development as community portals.

A summary of the research method justification that informed the decisions taken is shown in table 3.2, in the previous Chapter 3.

The research design particularly utilises context-process analysis in the case study inquiry of community portal development in Blackpool. This is considered in detail in Chapter 6.

4.3 Research Tools and Techniques

The research tools developed and applied to undertake this research inquiry, comprise:

- Community Portal (UK) Survey 2002, (with SOCITM survey findings as comparator)
- Follow-up interviews of high-scoring portals as mini-case studies of:
    - Directgov (National government portal)
    - CCIS / Craignet (Edinburgh)
    - EastServe (Manchester)
    - BlackburnWorld
    - Manchester Community Information Network (MCIN)

A further mini-case study was included that did not feature in the 2002 survey. The case study of Alston Cybermoor has been used to include the rural community dimension.

  - Alston Cybermoor

- A major case study of Blackpool features in Chapter 6 as a longitudinal case study undertaken over a five year period from 2000-2005.

The application is conducted within the contextualised approach of an interpretivist enquiry, informed by the hybrid approach of participatory action research, actor-network theory, and a context-process analysis framework.

A national questionnaire survey of all UK local government authorities, and central government portal providers, was conducted in 2002. Statistical analysis enabled a profile of activity and capability to be determined. As this was a 'one-shot' exercise, separate data was obtained for comparison of results from surveys undertaken by the Society of IT Managers (SOCITM). Analysis of the findings is detailed in Chapter 5.

The survey findings identify a low percentage of Local Authorities that have 'portal-like' interactive services on-line.

A longitudinal Case Study of Blackpool has been undertaken over a two year period (2002-2004) to follow the development life-cycle of a *'portal'*. This study is detailed in Chapter 6.

4.4 Application of Participative Action Research

Participatory Action research has been employed in this Case Study. Action Research has been a distinctive form of enquiry since the 1940's. Kurt Lewin (Lewin, 1946) generally receives credit for introducing the term "action research" and this is discussed in Chapter 3 as a way of generating knowledge about a social system, while, at the same time, attempting to change it. Participatory in this context involves the researcher in participation in co-generating problem solutions and new knowledge (Whyte, 1991, Checkland, 1991), to the extent of focusing on helping create new possibilities for the 'community portal' system, in this case.

Peters and Robinson (1984) found the following shared features for Action Research, and these have been applied in work on the Blackpool case study:

- problem focus,
- action orientation,
- cyclical process, and
- collaboration/participation.

Along with scientific enquiry - to contribute to general knowledge, Action Research also adds a dimension of problem solving. This research also adds a further purpose of enhancing the system being studied, in this case the Blackpool community portal (www.blackpool4me.com) (accessed Feb 2006). This contrasts with the classical Action Research in that the research focuses on what could be rather than what is. (Elden & Chisholm, 1993). Contextual focus is another contrast between conventional social science, in the sense of

laboratory experiments and action research, that is 'context-bound' inquiry (Susman, 1983, Susman & Evered, 1978), in part because the researcher is concerned with solving 'real world' practical problems. In short, the contextual focus is on the content of the problem and its solution'. (Elden & Chisholm, 1993).

In conventional science, research subjects do not participate in the research in the sense of having a say in the process. In the classical Action Research model, in contrast, the researcher's monopoly in knowledge generation does not exclude those who supply the data from participating at least to some degree in certain phases of the research process. Indeed, Action Research would be impossible without some form of participation. Since Action Research focuses on problems of both practical and theoretical importance, it requires those who experience or 'own' the real world problem to be actively involved with the researcher at least in selecting the problem and sanctioning the search for solutions. This dependence on subjects requires feedback to, and active interaction with, the people involved at least in the beginning and in the action phases of the research process. Collaboration also supports and encourages the on-going cyclical and emergent nature of the Action Research process. System members, who would typically be passive subjects in traditional forms of research, must actively support the research process in Action Research.

There is growing evidence that participatory methods are being increasingly used at Local level Government. A study of public participation in English local authorities revealed that 47 per cent of local authorities had used focus

groups, 26 per cent used visioning exercises, 18 per cent citizens' panels, and 5 per cent citizen juries (Wilson 1999). These methods are now being found in use in fostering citizen involvement in community networking and portal requirement consultation exercises.

The above justification for close involvement of participants in the Blackpool Case Study explains the role of participants in co-determination of outcomes in all phases of this inquiry – most particularly in the critical phases of designing the inquiry and making sense out of the responses and data. (Elden & Chisholm, 1993, p129).

To undertake a 'single case-study' applying the methodology described by Cohen (2001), problems arise in relation to ambiguities introduced by trends and variations in baseline phase data, and with the generality of results from case-study research. Returning to the earlier point in this section that Action Research is "a way of generating knowledge about a social system, while, at the same time, attempting to change it". This links to the theory of Culture and Organisations expressed in section 3.3 (that introduces organisational culture and its impact on IS departments). Zihni, a Local Government Senior Executive in Birmingham (UK), commenting on Local Government in the UK, highlights a need for change in legislation currently affecting local authority operations and hampering the development in a way that is symptomatic of the ingrained culture.

Zihni (2003) asserts in interview:

> "Legislation surrounding public administration has been created on a piecemeal, as-and-when basis at different times of our history. If we are serious about joined-up working, we will need to look across the board and reform these laws collectively. A silo approach to this reform will take forever and prevent the public sector from doing the simplest of things. For example, it is currently considered unlawful to alter addresses throughout the Council when a data subject has notified us of a change to their Council tax, even when the data subject has consented!"
>
> (Zihni, 2003)

The prevalence of such examples of restrictive legislation is a significant factor currently fettering development of data systems. This in part accounts for some of the problems at sub-culture level exposed in section 6.8.

Participatory Action Research is capable of exposing such issues of culture and organisation, and is a pragmatic method for undertaking the Case Study.

4.5 Community Portal (UK) Questionnaire Survey 2002

Within the UK Government sectors many initiatives emanated from local authorities, aimed at creating community portals to complement the national portal UK Online. This survey, (undertaken in 2002), gathered information from local authorities on existing and planned development of a community portal. The primary goal was to explore characteristics of existing community portals and key drivers of the development.

Four hundred and sixty eight questionnaire forms were mailed to County Councils and Local Authorities, in England, Scotland, Wales and Northern Ireland. The primary aim of the questionnaire was to identify the presence and nature of government sponsored portal activity in the United Kingdom in 2002. The intention was to select a subset of 20 local authorities, (determined by objective analysis of survey responses), that demonstrate the most advanced level of 'portal-like' capability to enable further investigation. These local authorities were then considered as potential case-studies.

The structured postal survey questionnaire collected information from a range of themes and issues, to identify local authorities that were active in portal development, and rank them according to their level of capability and degree of interactive service capability. 143 completed responses were received from the mailing. These were from England, Scotland, and Wales, but it is notable that no responses were obtained from Northern Ireland.

The questionnaire was designed in 2001, and iteratively refined through a small pilot exercise in late 2001. The questionnaire was issued in early 2002 to 468 local authorities, and 143 completed returns received up to April 2002. This was a 31% response rate, and deemed a sufficient sample to draw initial conclusions.

Following objective analysis of the responses a short list of 20, and subsequently 10, top scoring Local Authorities was obtained.

4.5.1 The UK Survey target group. - 468 local authorities (ODPM, 2001) were identified and targeted as recipients of the questionnaire survey in early 2002. This represented all Local Government authorities in England, Scotland, Wales, and Northern Ireland. Other national and regional actors were included in the mailing to gain a perspective of central government portal development.

It was initially intended to group categorise responses from countries (England, Scotland, etc) and to further categorise responses by region and type of government body. Rather than grouping the responses at the outset, it was decided to undertake an objective analysis of each response and test the findings against the SOCITM survey categorisations (see section 4.4.6) to determine any correlation of findings based on type of Council (e.g. County, District, Unitary).

The rationale for this was that the survey was a ladder climbing exercise to detect the presence of high scoring portal activity, rather than an in-depth study of geographic distribution.

4.5.2 Survey Design and Identification of Target Group - The literature review revealed that there had not been extensive detailed studies specifically focused on detection of Community/Civic portal activity across the range of all local authorities in the UK. However, the SOCITM surveys of local authority

web-sites in 2002, 2003, and 2004 was seen as a usable snapshot comparator to verify the Community Portal UK 2002 Survey.

The postal survey was an extensive survey, targeted at the total population of all local authorities in England, Scotland, Wales, and Northern Ireland. While giving a potentially large data set this method brought into question the value of any statistical data for extrapolation, as the data will have been subject to self-selectivity by the respondents (Ebdon, 1981). Accepting this potential flaw, it was felt that sufficient information could be gathered to justify this approach and testing against the SOCITM findings would be useful.

4.5.3 Question formulation - The strategy for the design and implementation of the Community Portal UK 2002 survey was based on practical illustrations provided by Oppenheim (2000) and Cresswell (2001). The literature review and background research (Chapter 2) identified an agenda to formulate the structure and content for the questionnaire survey. The content was influenced by the previous research of Graham and Dominy (1991) and the evidence brought forward from relevant literature research. Informal discussion with local authority officers assisted the design and format of the questionnaire structure and content.

The questionnaire was compiled to research the state of development of community portals, and their related technology. Two parts exist to the paper-based questionnaire forms:

- Part 1 - Sections A, B, and C. This four-page form was sent to all recipients.
- Part 2 - Sections D, and E. This follow-up survey was a separate form reserved used as an initial framework for telephone interviews.

Part 1 - Three sections were used to gather data related to:

- Section A - Current Position (3 Questions)
- Section B - Business Issues/Drivers/Plan (23 Questions)
- Section C - Technical issues (9 Questions)

Part 2 - Two further sections were used as an interview framework:

Section D - User segmentation grouping (7 Questions)

Section E - Views and personnel background (14 Questions)

Thirty five questions were asked through the questionnaire, and up to a further 21 questions in a subsequent interview.

4.5.4 Community Portal Survey 2002 Pilot - The initial questionnaire was constructed between July 2001 and October 2001. The questionnaire is included as Annex 1. The questionnaire was piloted in November and December 2001 to several Local Government officers in different local authorities. Iterative changes were made based on recommendations and groupings modified.

4.5.5 The Community Portal (UK) Survey 2002 - The full survey form was finalised, proof read, and printed in January 2002. Four hundred and sixty eight copies were posted to Chief Information Officers, or IT Managers, as named individuals where possible, using the Local Authority membership Handbook 2001 as a resource. In the absence of a named individual the letter was posted to the Chief Executive and marked for attention of the Regeneration Officer. All survey forms were despatched before the end of January 2002, and a three-month period was allowed for completed responses to be received.

Analysis of the returned is considered in depth in Chapter 5.

From the objective scoring of the respondent forms an initial top 20 high scoring responses was derived and from this list further reduced to a top 10 respondent authorities.

This sub-set of 10 local authorities was used to illustrate the most advanced group of community portal developers and through further investigation of the capability of each of the local authorities identify characteristics that distinguish the development leader sites. The intention was to undertake in-depth interviews with the respondents from the 10 authorities as an extended telephone interview. The office of each of the 10 named respondents on the questionnaire response was contacted to seek to arrange a 30 minute interview time and date. Although 7 out of the 10 agreed to participate in the

interview, only 4 interviews were actually conducted with representatives from the top-10 respondent authorities from the 2002 survey.

Indications of the questions were given in the pre-interview arrangement call to enable any preparation. The intention of this interview was to fill any gaps in understanding and obtain clarification of any ambiguity or misunderstanding in the response questionnaire, and move on to draw on the experiences of this disparate range of authorities, in an attempt to identify any common patterns and processes, as well as look for evidence of advanced and successful strategies.

Four telephone interviews were conducted in total as the other 3 interviewees was unavailable at the arranged time and despite efforts it was not possible to re-arrange a mutually convenient day/time. Each telephone interview was recorded, with consent obtained from the interviewee, and notes taken at the time of salient points. The recording was subsequently transcribed. A value of each interview was that it revealed considerable information about the logic and thinking behind the development of the community portal.

Other interviews are listed in Appendix 5, but these were telephone discussions primarily intended to clarify issues arising from answers given in the survey response.

4.5.6 SOCITM Surveys as a Comparator - The Society of IT Managers (SOCITM) publishes annual reports, giving a snapshot analysis of local

authority websites. The 2003 report presented findings of a survey conducted in 2002. This report was their fifth annual survey of all local authority websites, aimed at checking usefulness to citizens of government web sites.

The survey reviewed every local authority 'web-site presence' throughout the UK, forming part of an annual series of surveys (SOCITM 2003, 2004, 2005) (see Chapter 5, section 5.5). The Society of IT Managers is a UK national organisation for the local government sector, which has been used as an independent source for correlation of results. This exercise reviewed every local authority 'web-site presence' through the UK.

The survey utilises a structured questionnaire (with over 60 questions) based on four scenarios (i.e. typical situations facing site visitors) and five themes (i.e. joined-up government, access to the council, currency, usability, and interactive transactions). The survey evolves each year but the basic method remains the same. In the SOCITM survey methodology Council web-sites are ranked using a four-point classification to reflect the state of development. SOCITM classify websites as:

- Promotional (P) - sites providing basic information about the organisation with very little scope for interaction.
- Content (C) - site providing useful content and encourage some interaction.
- Content Plus (C+) - site providing very useful content and offering some examples of more advanced features.
- Transactional (T) - site provides essential content, and self-service values drive the whole site and combine to offer a compelling user experience.

(SOCITM, 2003 (p22-23))

The SOCITM surveys are conducted by scrutiny of a web-site and are based around on-screen observation and responses from web-site enquiries rather than through dialogue with developers, or the hosting authority representatives. They have been conducted and developed year on year since 1999, and seven surveys now exist (SOCITM, 2005).
Applying the SOCITM classification did confirm the low percentage of *Transactional* portal site capability between the UK Survey and the SOCITM survey.

In 2006 the SOCITM ranking profile of four categories will be amended to include a new rank of "E" to highlight a website that is "effective, efficient, and engaging". (Government Computing, 2006).

4.5.7 ***Case Study of Blackpool*** - A longitudinal Case Study of Blackpool has been undertaken to research the development process of a community portal within a UK Local Authority. The study has been undertaken over a two-year period from 2002 to 2004, with preparatory work undertaken in 2001.

Context –Process analysis has been used to investigate the evolution of this development project. The findings are reported in Chapter 6.

4.6 Chapter Summary

This chapter has presented the detailed methodology used in support of this thesis.

It has explained why the adoption of interpretivist research enquiry was selected, due to the complex nature of people and technology issues, which enable the wider socio-technological dimensions to be studied. Participative action research is the chosen approach, utilising context-process analysis, actor-network theory, because of the holistic approach and emphasis on longitudinal study.

The research tools adopted were:

- Community Portal (UK) Survey, conducted in 2002,
- Follow-up interviews of high-scoring portals as mini-case studies of:
    - BlackburnWorld
    - Craignet
    - EastServe (Manchester)
    - Manchester Community Information Network (MCIN)

  and a rural mini-case study of
    - Alston Cybermoor
- Case Study of Blackpool, from 2002-2004.

The chapter discussed the specific methods that were planned and used, along with discussion on the principles that 'operationalised' *context-process* analysis in the case study. Chapter 6 shows this process in action, in the form of a contextualist case study of the process of information systems

development to produce, implement and sustain a community portal in Blackpool.

The findings of these surveys and case studies are reported in:

- Community Portal (UK) Survey 2002 - Chapter 5
- Mini-Case Studies - Chapter 5 (plus Appendix 4).
- Case Study of Blackpool (2002-2004) - Chapter 6

5. Chapter 5 - The Community Portals (UK) Study.

Survey Results: A national questionnaire to probe the capacity of local authority community portal development.

5.1 Introduction

This chapter presents the evidence collected from the research work undertaken using the methodology outlined in Chapter 4.

Data was collected through a national postal research survey questionnaire sent to local authorities throughout the UK.

The chapter details the results of data collection and analysis work undertaken, to inform a response to the research questions outlined in the earlier chapters.

The first section gives basic quantitative findings from responses to survey questions. Subsequent sections consider the qualitative data that has been collected both through both analysis of responses to the postal survey questionnaire, and interview evidence gathered through follow-up telephone conversations and visits.

5.2 General Statistics from responses to the Community Portal (UK) Survey 2002 Questionnaire

The survey questionnaire was sent to all 468 UK local authorities, accompanied by an explanatory letter. 143 completed forms were received, giving a response rate of 36% overall. Adequate representation existed from all authority types in England, Wales, and Scotland; but it was notable that zero questionnaire responses were received from the eleven questionnaires sent to Northern Ireland.

The Community Portal (UK) study questionnaire (see Appendix A) asked thirty-six questions in 3 discrete sections. Section A (Current Position) was included to establish the current position for the organisation i.e. Have you implemented a community portal – Yes/No. Section B (Business Issues/Drivers/Plan) questions the development rationale, and the third section (Section C) sought information on the Technical configuration of the portal (where such information was available).

Appendix 1 shows the questions A1 to A3; B1 to B23; and C1 to C9. The questions comprise 128 data entries that were closed questions i.e. Yes / No answer responses. Based on straight scoring the responses were ranked to give a top-20 listing. This was undertaken by use of a spreadsheet to record responses to question elements from each of the 143 completed questionnaires. Initially 20 top scoring sites were selected from the respondents that indicated an existing portal presence (see Table 1 below and Appendix 2).

5.3 Statistical validity of data obtained

Each questionnaire was sent to a named person in the local authority (where known), derived from a directory of UK Government. Where a name was not known the letter was addressed to the Chief Executive for the attention of the Regeneration Officer.

Accepting the fact that every local authority (468) received a questionnaire, it is accepted that the completion of questionnaire forms and submission of a response has been from a self-selecting group. Ebdon (1981) criticises such an approach, believing that self-selecting samples are invalid. This means that the statistics obtained from the survey exercise do not allow rigorous testing or reliable analysis, but nonetheless inform a response to the research questions for this thesis. For this reason and also to corroborate the findings a second source of data was obtained from the SOCITM survey (SOCITM, 2003).

5.4 Specific Data Findings

The raw data response to the questions gives an overall profile of community portal development activity in the UK in 2002.

Section A: Current Position - In Section A, two questions were used to probe the level of community portal activity. The questions were:

Question A1 Have you implemented a community portal?

Question A2 If you do not currently have a community portal are you planning to implement one?

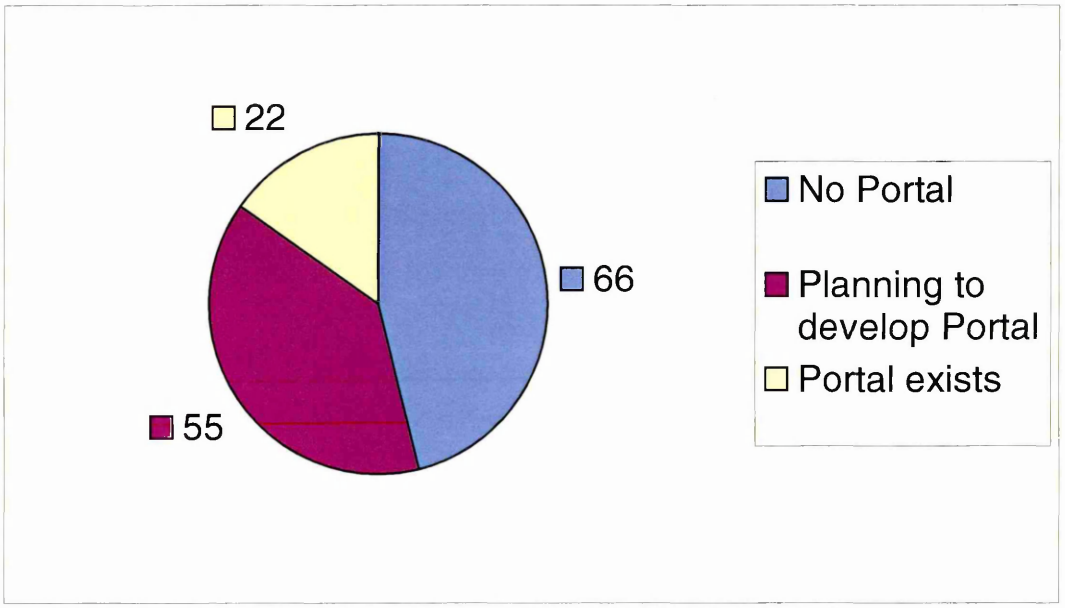
The purpose was to ascertain at the outset the numbers of authorities that claimed to have a community portal, or were in the process of development.

Of the 143 responses, 15% (n=22) indicated (in 2002) that they already had a portal.
33% (n=55) stated that although the local authority planned to implement a portal within the next 12 months they did not currently host a community portal at the time of survey in 2002.
The remaining 46% (n=66) indicated that their local authority were not planning to develop a portal. These responses were removed from further analysis.

Fifty two percent of the respondents that claimed a portal presence in 2002 stated that they have been developing this for 3 to 5 years (Question B4). These were key findings, but the quality and attributes of the portal were only established by further data analysis.

Figure. 5.1 graphs responses to questions A1, and A2 .

fig 5.1 Local Authorities who had, or planned to develop a Community Portal (2002)



(source: Community Portal UK Survey, 2002)

Combining the statistics for respondents who were currently hosting, or planning to host a community portal within the next 12 months gave a key finding that of the 143 local authorities responding to the survey 54% (n=77) already had (in 2002) or planned to develop a community portal by 2003.

Assuming that non-respondent authorities did not have a portal in 2002, reduces the percentage to 5% (n=22) out of 468 authorities claimed to have a portal in 2002. This low percentage of 5% is a start point for further assessment of the available functionality for interactive service channels of the sites that claim to possess portal characteristics.

Question A3 queried the knowledge of other portal activity by asking the respondents to list the name and uniform resource locator (url) for any other portals they were aware of. Few respondents answered this question.

Section B: Business Issues / Drivers / Plan - This is the largest section of the questionnaire, containing 23 questions in six discrete subsections:

- Identification
- Objectives
- User Base and User Benefits
- Portal Development and Support
- Portal Access
- Return on Investment

Questions B1 and B2 are fact-finding, asking the respondent to name their portal development and give the Uniforrm Resource Locator (url), to enable it to be found on the internet.

Question B3 probes the nature of the organisation, confirming either local authority or other type of organisation.

Question B4 asks how long the organisation has been active in developing a community portal. The results from the 77 respondents who indicated that they had (in 2002) or planned to develop a portal are:

B4 How long in developing	
Under one year 01	29
One to two years 02	18
Three to five years	24
Over five years 04	6

Question B5 queries how the community portal initiative started. The results are:

B5 How initiative started	
Funded project 01	41
Small group enthusiasts 02	4
Government initiative 03	26
Other 04	6

These indicate that the origins are predominantly government funded projects.

Question B6 investigates the most important reason for deploying the community portal. The results are:

B6 most important reason for deployment	
Distributing information 01	32
Encouraging collaboration 02	21
Supporting voluntary groups 03	7
Economic regeneration 04	9
E-Business 05	8

This indicates that in 2002 the main reason for establishing a portal was for distributing information and encouraging collaboration, rather than supporting interactive service channels for e-Business, or linking to any regeneration strategy.

The profile for this sub-section on 'Objectives' (Questions B3-B7) reveals that the community portal developments had arisen in the five years previous to 2002, mainly as government funded projects linked to distributing information, and encouraging community collaboration, rather than e-Business on-line transactions.

Questions B7 through to B12 assess the User Base numbers and User Benefits. The results for this sub-section are shown below for 2002 indicating a spread of user numbers, with the majority of community portal developers anticipating user numbers greater than 5,000 users.

B7 How many users		
Currently	Up to 100 01	12
	Up to 1000 02	18
	Up to 5000 03	12
	More than 5000 04	31
	Other 05	4
Ultimately	Up to 100 06	0
	Up to 1000 07	2
	Up to 5000 08	3
	More than 5000 08	67
	Other 10	1

Question B8 queries the primary target users and finds that the majority of users are members of the public, rather than other groupings.

B8 Primary target users	
Members of Public 01	56
Private Sector employees 02	0
Specific Interest groups 03	17
Public Sector employees 04	1
Ethnic groups 05	2
Others 06	1

Question B10 sought to categorise the types of geographic area the portal primarily served. The 77 respondents who had (in 2002) or were developing a portal indicated that 17 were towns, 14 inner city, and 8 rural. The remaining 38 answered as 'other' with responses including County-wide, Town and outlying villages, District council, Highland community. Seven respondents did not answer this question and 13 ticked the 'other' box but did not indicate a type of 'other' community.

B10 'Yes' Geographic type	
Town 01	17
Inner City 02	14
Rural 03	8
Other 04	18

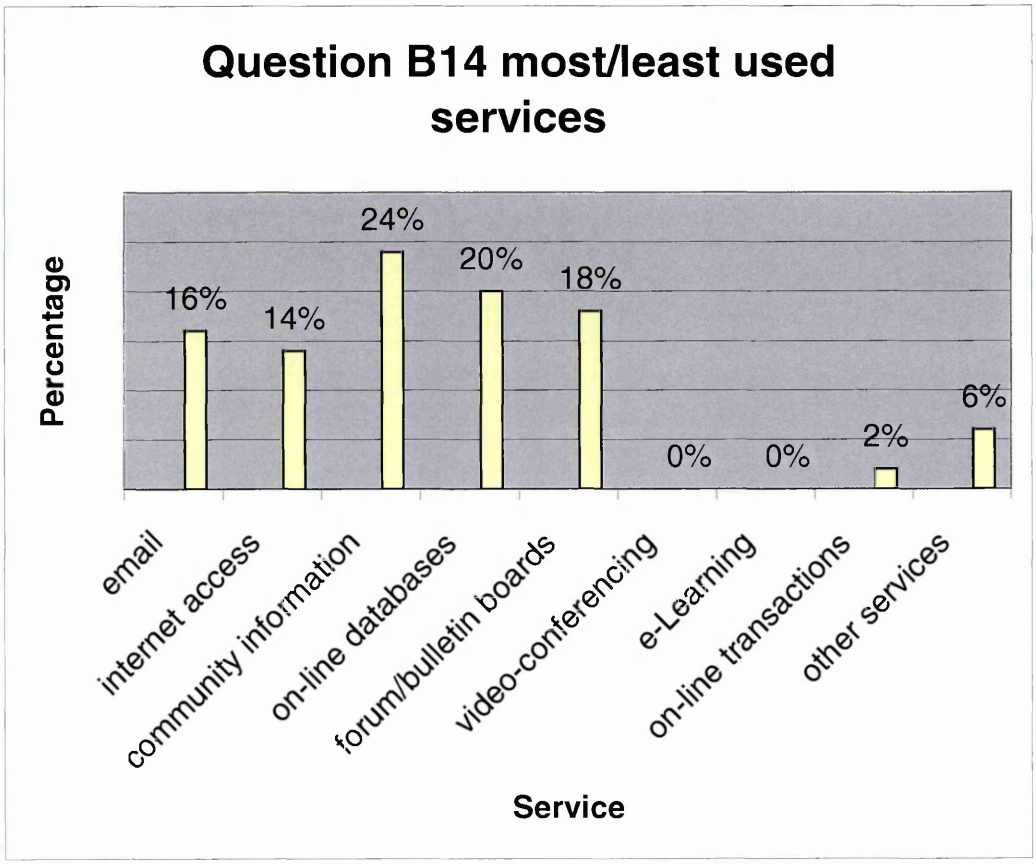
Questions B13 to B18 form a sub-section to gauge levels of portal development, service usage, through data collated from Q14 in particular, and continues in Questions B15 to B18 to gather information on how users find out about portal initiatives, and technical support information and any user training and familiarisation.

Question B13 finds that where obstacles exist to portal development, they are primarily perceived as Finance. Twelve respondents did not answer this question.

B13 Obstacles	
No major obstacle 01	10
Finance 02	19
No qualified personnel 03	7
Lack of political will 04	6
Present organisation 05	5
Lack of coordinating body 06	6
Other 07	7

Question B14 was multi-parted, asking respondents to indicate the three 'most' used, and three 'least' used services within their portal. The data below (figure 5.2) is extracted for the 22 authorities hosting portal in 2002. Respondents were asked to select 3 services, and the profile of responses is illustrated graphically to indicate the most and least used services. Data from sections of Question B14 has been collated to show in percentage terms the profile of service use.

Figure. 5.2 Service Usage – data from 22 portals in 2002.



(source: Community Portal UK Survey 2002)

Ninety two percent of the services comprise Community information database (24%), other on-line databases (20%), Forum / Bulletin boards (18%), email (16%), and Internet access 14%.

The remaining service options of Video-conferencing (0%), on-line transactions (2%), e-Learning (0%), and other services (6%), amount to only 8% in total.

The low percentage of 2% for on-line transactions (e-Commerce) is significant in its correlation with the SOCITM data for the 2002 year survey.

Responses to question B19 show a spread of user access ranging reasonably evenly between Home users, Community Centres (UK Online), Library, Workplace, and School use.

B19 Users access	
PC at Home 01	30
PC in Comm'ty Centre 02	22
PC in Library 03	28
PC in workplace 04	24
PC in School 05	22
Public Kiosk 06	9
Digital TV home 07	11
Mobile phone 08	3

Content production (Question B20) responses show that dispersed groups of content producers exist. This was confirmed by interview responses indicating the Content Authoring software is used by Citizens to generate community content, as well as 'small group centrally' located content publishers within local authorities.

B20 Producing Content	
Single person 01	4
Small group centrally 02	7
Dispersed group 03	19
Other 04	4

Content updating (B21) is reportedly a daily event, but investigation of this fact by inspection of the respondent portal site did not give evidence in support of this claim, and in some cases the pages of content were considerably out of date.

B21 Updating content

Daily 01	13
Weekly 02	4
Monthly 03	6
Other 04	11

Sustained funding streams were claimed by the majority of respondents who either had (in 2002) or were planning to develop a community portal.

B23 Sustained funding

Yes 01	24
No 02	8

Section C: Technical - Nine Technical questions were offered in Section C. With few exceptions the answers to questions in this section were either omitted or poorly answered, with the consequent result that it was impossible to derive a detailed picture of technical development. The question offered the opportunity to omit the entire Section C if a technical contact was unavailable to complete the survey and many respondents did omit the section.

An assumption is that technology resources (People) are either unable or unwilling to give detailed insight into the systems underpinning their portal development.

5.5 SOCITM Comparator

Chapter 4 (section 4.5.6) introduced the use of findings from SOCITM surveys to corroborate the findings of the Community Portal (UK) Survey 2002.

Only weak correlation could be found between the Community Portal UK Survey 2002 in specific match of named local authorities, and the SOCITM survey. The explanation for this is that many of the authorities included in the SOCITM survey did not respond to the UK Community Portal (2002) questionnaire survey, whereas the SOCITM survey was achieved by observation of attributes of each web-site. Although the comparison was unable to produce supportive evidence, the approach offered a categorisation methodology for evaluation. Applying the SOCITM classification did confirm the low percentage of *Transactional* portal site capability between the UK Survey and the SOCITM survey.

5.6 Community Portal (UK) Survey 2002 - Data Analysis Summary

Secondary analysis using objective criteria was undertaken to gauge the attributes of each portal described in the responses (see table 5.2), and subsequent on-line investigation was used to supplement this exercise by visiting the portal site.

Four attributes were used for quantitative scoring against specific elements and features of the portal. The attributes were:

- Portal characteristics

- Services included
- Technical configuration
- Site structure

A four box matrix was compiled with the four attributes, giving allocation of a 0-5 marking score for each of the four sections. Further analysis of point scores from the matrix, and in particular in-depth on-line scrutiny of the portal site, led to final selection of the top-10 highest scoring portals.

Table 5.1 Survey matrix scores for UK Authorities with Portals in 2002

(note not ranked in order of point score)

Number	Assigned No.	Name	Portal Characteristics	Services Included	Technical	Site Structure	Total Score
1	*1*	Craignet	5	5	4	4	18
2	*7*	Bristol	3	2	3	2	10
3	*19*	Merton	3	3	2	3	10
4	*24*	NorthAyrshire	2	3	2	3	9
5	*19*	Bromley	3	2	3	2	10
6	*34*	Broxtowe	3	2	2	2	9
7	*51*	Ashford	3	3	3	2	11
8	*62*	Wandsworth	3	2	2	2	9
9	*73*	Knowsley	5	4	5	4	18
10	*85*	EastServe (Manchester)	4	5	5	4	18
11	*87*	Surreyweb	2	3	2	2	9
12	*88*	Newham.net	5	5	3	4	17
13	*101*	Camden	3	3	2	3	11
14	*109*	Thurrock	3	4	4	3	14
15	*110*	Blackburn	5	4	4	4	17
16	*121*	Pembrokeshire	3	3	3	3	12
17	*122*	StHelens	4	4	3	4	15
18	*134*	Gloucester	3	2	3	2	10
19	*140*	Manchester MCIN	5	5	4	4	18
20	*142*	Warwickshire	5	4	4	4	17

(source: Community Portal UK Survey 2002)

The criteria of *portal characteristics* assessed the extent to which the portal under consideration met the following:

Score	*Portal Characteristic* Attributes
5	• Comprehensive portal characteristics. personalisation, good taxonomy, strong metadata, federated searching, content publishing tools, embedded links to national and other portal services e.g. DirectGov.
4	• Many portal-like characteristics
3	• Some portal characteristics
2	• Few portal characteristics
1	• Insufficient evidence of portal characteristics
0	• Does not possess any portal characteristics

The criteria of *services included* assessed the extent to which the portal under consideration met the following:

Score	*Services Included* attributes
5	• Comprehensive portal service characteristics, including many interactive service channels.
4	• Many portal-like service characteristics. Some interactive services
3	• Some portal service characteristics. Few interactive service channels
2	• Few portal service characteristics. No interactive service channels
1	• Insufficient evidence of service characteristics
0	• Does not possess any service characteristics

The criteria of *technical* configuration assessed the extent to which the portal under consideration met the following:

Score	*Technical* Attributes
5	• Comprehensive Technical characteristics with excellent connectivity and content management system / database driven site. Existence of Content Publishing tools.
4	• Many Technical attributes e.g. high speed connectivity, database driven
3	• Some Technical attributes e.g. good connectivity.
2	• Few Technical attributes – poor connectivity
1	• Insufficient evidence of Technical characteristics
0	• Does not possess any Technical characteristics

The criteria of *site structure* assessed the extent to which the portal under consideration met the following:

Score	*Site Structure* Attributes
5	• Comprehensive Site Structure characteristics
4	• Many Site Structure characteristics within a strong framework structure
3	• Some Site Structure characteristics – clear framework exists with good links to services
2	• Few Site Structure characteristics – no clear framework evident with good links in place
1	• Insufficient evidence of Site Structure characteristics
0	• Does not possess any Site Structure characteristics

The top 10 portal list was derived by objective scoring of attributes, complemented by subjective analysis using on-line inspection of the portal site. This short-list of ten portals was used for further investigation through interview with people involved in the portal development and support. Although arrangements for interviews were attempted with personnel from each of the top 10 portal, using pre-arranged appointments, with the named respondent for the portal (see section 4.5.5), only four telephone interviews were eventually conducted with people representing the top-10 portal sites (identified from the 2002 UK Survey).

The telephone interviews became the basis for 4 mini-case studies of: Craignet (Edinburgh), EastServe (Manchester), BlackburnWorld, and Manchester Community Information Network. A fifth case study was included for Alston Cybermoor to give a rural perspective. The sixth was UK Online (now Directgov). (see section 5.10, and Appendix 4).

Table. 5.2 Community Portal - Objective Gauging of Attributes

Name of Site: _____

	Attribute		Attribute
	Portal Characteristics 5 mark max • Personalised pages • Content Publishing tools • Community Collaboration tools • Taxonomy ▪ Information search facility ▪ Integration of linked services ▪ Document Directory • Interactive service e.g. e-Gov		**Services included** 5 marks max (0.5 mark per service) Culture, leisure, recreation and tourism Community governance and democratic issues Consumer protection & trading standards Economic development and recreation Education & Libraries Emergency Services Employment Environment issues European issues Finance Housing Human resources issues Judicial, probation & Legal Services Modernising government Planning & Built Environment Regional issues Rural issues Social inclusion Transport Utilities & Energy management
	Technical 5 marks max Server availability/farm Connectivity • ISDN (0.5 mark) • 2MB Leaseline (1 mark) • ADSL (1 mark) • IDTV (2 mark) Knowledge Base Data Driven XML On-line content publishing e.g. ftp Supports on-line transactions e.g. e-Gov (Gov't Gateway) User id's issued Secured sign-on Single sign-on to applications		**Site Structure** 5 marks max • Corporate style • Ease of navigation • Site-map • Subject search ▪ What's new ▪ Feedback • On-line transactions (e-Business, e-Gov)
			Total mark (out of 20 poss)

(source: Community Portal UK Survey 2002)

5.7 Secondary Analysis of Survey Responses, reporting on Top-10. Community Portal (UK) 2002 Survey - Part 2 Sections D and E

The subset of community portal responses selected as the highest scoring ten responses in the objective scrutiny were subjected to a second analysis to confirm the characteristics against the original criteria, and further review by direct observation of the portal on-line, including a guest log-in, where available (or facilitated by contact with the portal hosts).

Table 5.3 Portal Analysis - Top 10 Portal Responses (2002 Survey data) *(Plus Ukonline and info4local)* Note – not ranked in points order

Points	Number	Name	Portal URL	Interview
18	1	Craignet	www.craignet.org.uk www.ccis.org.uk	✓
18	73	Knowsley	www.knowsley.gov.uk	
17	88	Newham	www.newham.net	
18	85	EASTSERVE Manchester	www.eastserve.com	✓
14	109	Thurrock Community Info	www.thurrock-community.org.uk	
17	110	Blackburnworld	www.blackburnworld.com	✓
12	121	Pembrokeshire	www.pembrokeshire.gov.uk/pathway	
15	122	StHelens	www.sthelens.net	
18	140	Manchester MCIN	www.mymanchester.net www.hlminfo.net www.cheetham.info	✓
17	142	Warwickshire	www.warwickshire.gov.uk www.warwickshire.gov.uk/community	
20	39	UKONLINE	www.ukonline.gov.uk	✓
19	40	Info4local	www.info4local.gov.uk	

(source: Community Portal UK Survey 2002)

Interview arrangements were made by initial telephone contact with the offices of the 10 highest scoring respondent authorities. Upon establishing contact with the respondent a mutually agreeable interview date and time were sought. A thirty minute appointment was requested and at least two weeks notice was given. Seven respondents agreed to be interviewed and each of the interviewees were sent a copy of the questionnaire form Part 2, that comprises seven questions in Section D, and 14 questions in Section E.

Section D further probed the rationale for the portal development, including the addition of an extra question on e-Government as a key driver.

Section E investigated the goals and drivers for their community portal. Barriers to development and the future direction for development plans and activities were elicited through open questions that enabled the respondent to explain their own views.

Although sections D and E potentially contained 21 questions, this was used as a framework only, and far fewer (typically four) questions were used to conduct the interview.

Seven respondents agreed to participate, but in reality only six interviews were conducted as the seventh person was unavailable at the arranged time/date due to unforeseen circumstances and it was not possible to find a mutually convenient date to re-arrange the interview on. A telephone with a speakerphone function was used for the remote interview. Tape recordings

were made with the participants consent. Interviews were transcribed, and comprehensive notes had also been taken during each interview. The work of Oppenheim (2000) informed the reflective analysis of the interview statements. In this context the interviews added insight into the survey findings and gave a fuller picture of development activities and capability. It is important to note that all interviews were conducted with respondents in the top ten 'high scoring' survey responses and it is acknowledged that the other end of the spectrum where authorities may not have been able to commence portal development is an absent piece of the overall picture.

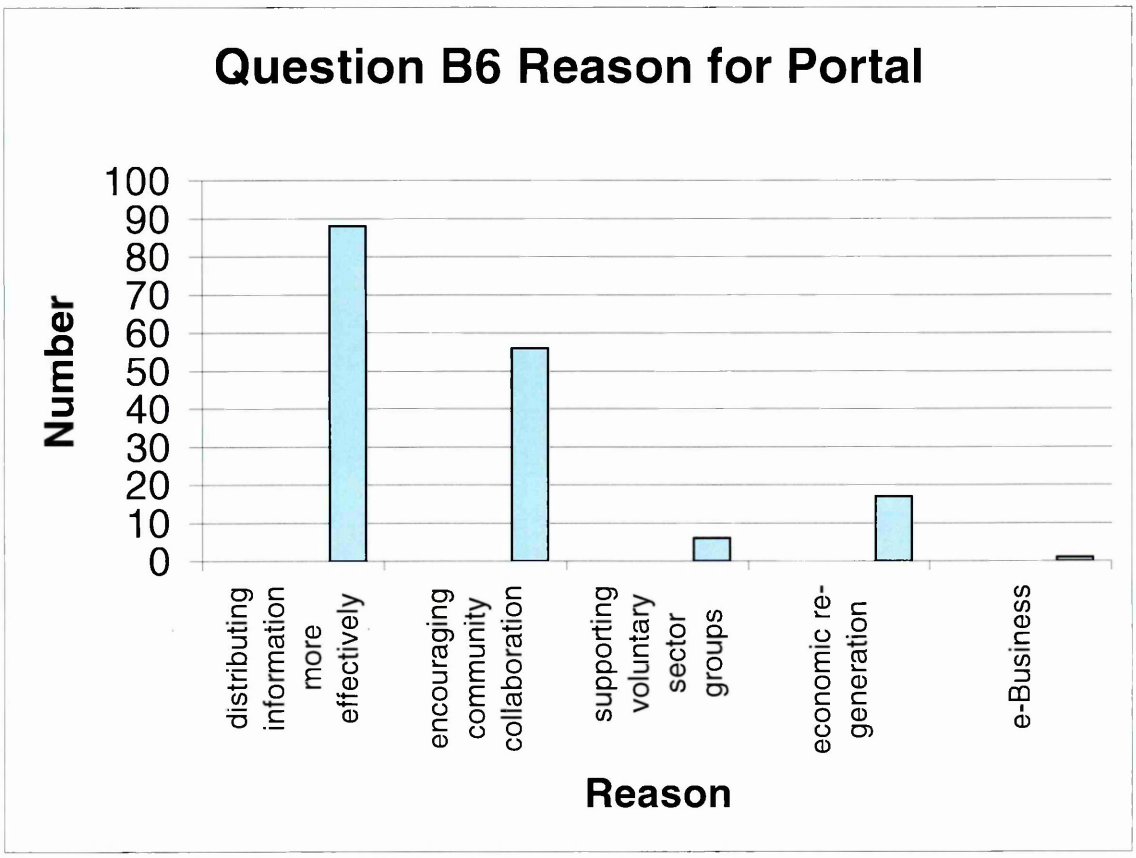
The interviews were particularly useful in filling in gaps or resolving ambiguity from the original questionnaire responses, and giving a richer understanding of the on the ground reality for portal sponsors and developers in 2002.

5.8 Specific information from Portal Survey Responses

Key Objectives. Question B6 of the questionnaire asked local authority officers which was the most important reason for deploying their community portal. (see figure 5.2 Survey Question B6 responses). Of all 77 respondents that had an existing or planned development in the next twelve months 52% (n=40) indicate that 'distributing information more effectively' is the most important reason for the existence of their portal; 34% (n=26) indicate that 'encouraging community collaboration' is the most important reason; 3.5% (n=2) indicate that 'supporting voluntary sector groups' is the most important reason; 10% (n=8) indicate that 'economic regeneration' is the

most important reason; and only 0.5% (n=1) indicate that e-Business is the most important reason for their community portal presence.

figure 5.3 Survey Question B6 responses



(source: Community Portal UK Survey 2002)

With hindsight, a question arising from the key objectives would be to probe the alignment with the business strategy of the local authority. Although not included in the questionnaire the subsequent interview specifically probed this topic in the questioning process, with each of the authorities interviewed. Similarly, the questionnaire construction failed to query the relevance of *Implementing Electronic Government (IEG)* as a key Driver. To remedy this an interview question was included to establish the relevance of eGov as a

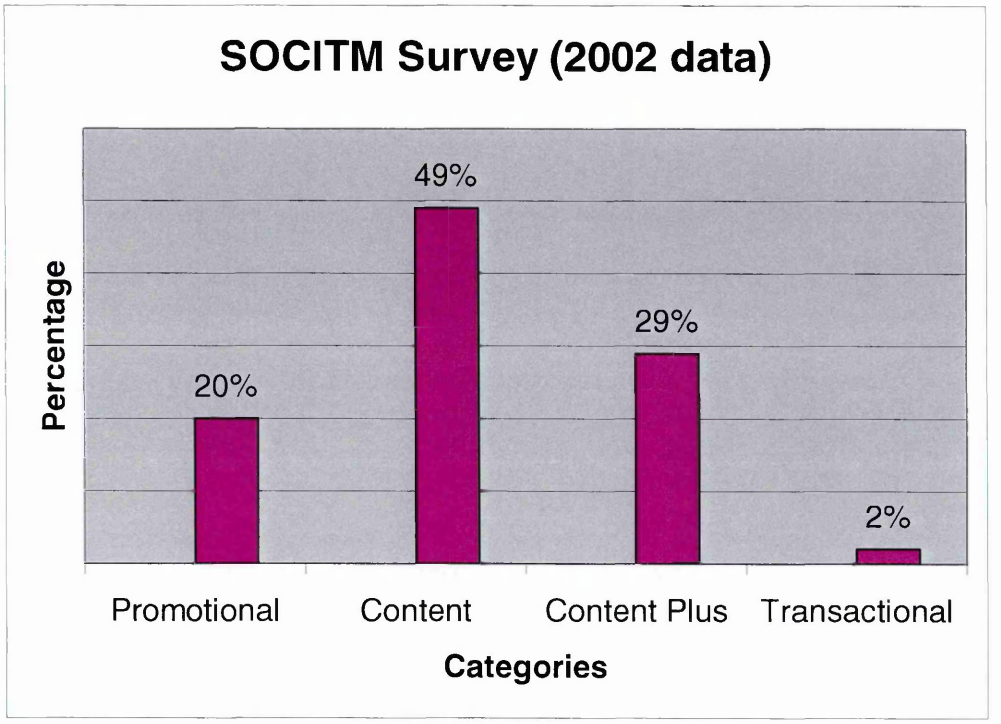
driver. During interview all participants (6) confirmed eGov as a key driver. Six interviews were conducted and only two local authority representatives were able to give specific examples of the existence of a strategic intent to develop a expressed in the business (or regeneration) strategy plan for the authority. However, each of the six authorities interviewed had included a portal development – (either explicitly, or implicitly by introducing a Web Service that was beyond the web page and included interactivity and transactional capability through a single gateway development) – within their Implementing Electronic Government (IEG) statements prepared in 2001. Caution is required in interpreting this statistic as the six authorities were the 'best of breed' highest scoring in the research questionnaire survey, and as such may not be representative of the overall response if a survey question had been included in the original survey.

5.9 Comparison of Portal (UK) Survey (2002) with SOCITM Findings

Initial analysis of the survey results led to a list of the top 20 'high scoring' sites. Further review objectively identified a top 10 for interview to gain further insight to the attributes and drivers of the development. At this stage there was still doubt and uncertainty regarding the validity of the results; in particular the low percentage of 'community portals' that were capable of on-line transactions. (see Figure 5.2 Community Portal Survey data 2002).

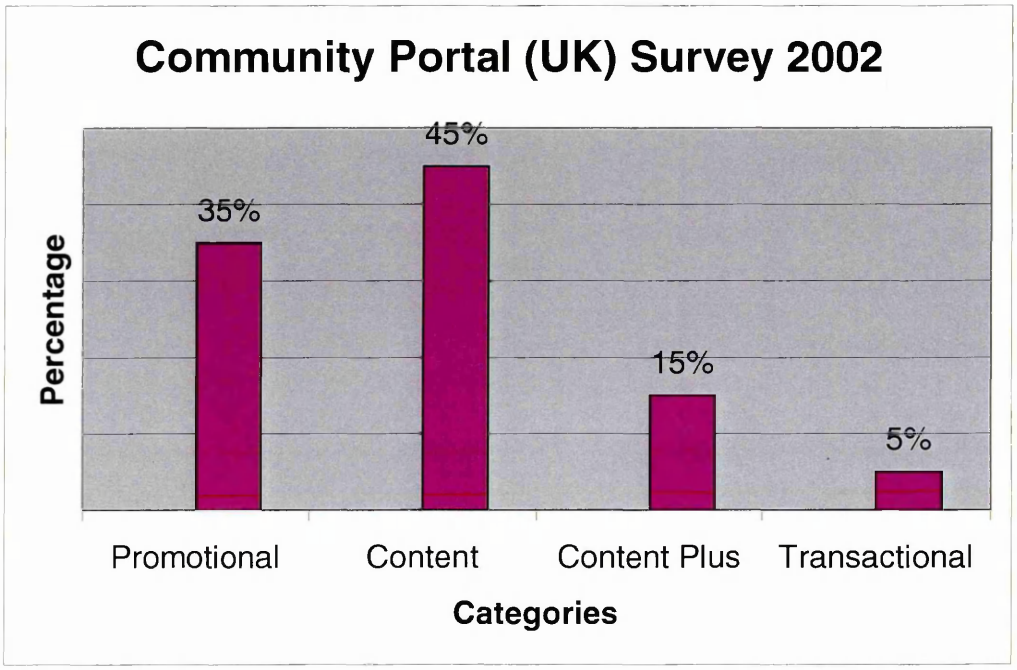
Applying the SOCITM categorisation model of Promotional, Content, Content Plus, and Transactional to the top 20 respondents to the Community Portal (UK) Survey 2002 enabled a profile to be determined for comparison with the SOCITM results.

figure 5.4 SOCITM Survey 2002



(source: SOCITM, 2003)

figure 5.5 Community Portal UK Survey 2002



(source: Community Portal UK Survey 2002)

Significantly, the comparison between the Community Portal (UK) Survey 2002, (see figure 5.2 UK Survey 2002) and the SOCITM survey with data collected in 2002 shows only low numbers of community portals / local government web sites with transactional capability – 5% and 2% respectively. The 5% transactional capability indicated by the community portal UK Survey 2002 needs qualification in that the survey sample is small and this amounts to only 1 Portal out of the top20. Further comparison with the questionnaire findings of Question B14 for the sample of 77 gives a 2% figure of portal sites that have on-line transaction capability.

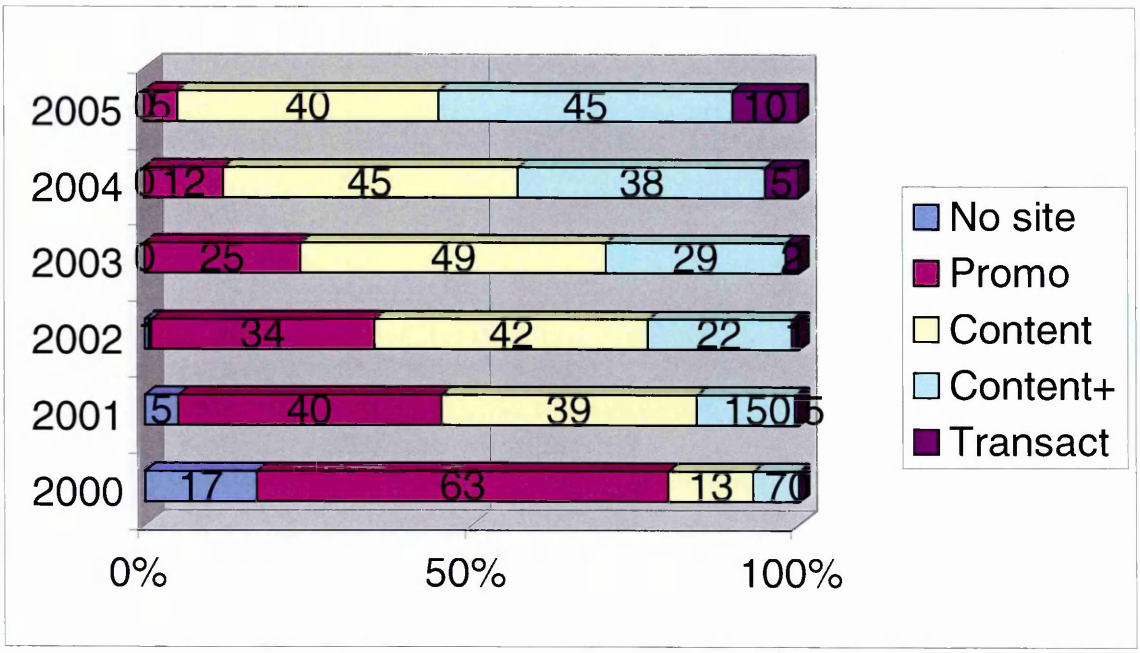
The results of both surveys confirm that few 'government community portals' possess advanced features and *'transactional'* capability.

Further SOCITM surveys have been undertaken and comparison of the results for each year (see figure 5.6 SOCITM profile 2000-2005) gives a profile of the development changes, revealing increasing numbers of local government websites that possess Content Plus and Transactional capability.

SOCITM Survey Profile over 5 Years (2001 – 2005)

Data from SOCITM survey reports over the past five years has been collated to derive the following profile.

Figure 5.6 SOCITM Profile 2000-2005



(source: SOCITM 2003, 2004)

Over the past five years changes include all Local Government authorities in the UK having a website (17 = no site in 2000, 0 = no site in 2003 report). Transactional site capability has increased over the past five years but still accounts for only one in ten of the sites being in this top category. (SOCITM, 2005).

5.10 Mini-Case Studies

The community portal UK Survey 2002 analysis identified a top-10 community portals, based on the survey response (Chapter 5, table 5.3). Four of the top 10 high scoring sites from were used as mini-case studies for further investigation, through examination of the portal site on-line, and physical visit to the site to meet staff involved and discuss development issues. The sites chosen were selected as both a representative spread of the highest score, geographic separation, urban mix, and ease of access (i.e. travel distance). The sites were:

- CCIS / Craignet (Edinburgh)
- EastServe (Manchester)
- BlackburnWorld
- Manchester Community Information Network (MCIN)

A fifth site was added subsequent to the 2002 survey to represent a rural dimension for portal development. Attendance at a conference presentation led to a visit to:

- Alston Cybermoor (Cumbria)

Appendix 4 and 5 outline the findings of these mini case studies, and the contribution to the overall analysis of community portals in the UK.

5.11 Chapter Summary

This chapter considers the findings of a research enquiry based on a questionnaire survey of UK Local and Regional Government authorities in the UK, and interviews conducted. The research finds that there are strategic portal developments beginning at all levels (UK Portal Survey, 2002) (SOCITM, 2003).

The Community Portal (UK) Survey 2002 findings, along with the SOCITM comparator data, identified limitations in existing 'community portals' giving a bench-mark against which the Blackpool case study considered in Chapter 6 could be presented.

Few local authority sites (2%) were found to possess 'Transactional' capability and portal-like characteristics (Question B14). The conclusions that can be drawn highlight the fact that community portal development is an extremely complicated process, linking people and technology issues. As such the impact on a community of a portal development was difficult to assess due to lack of further statistics, data, and information.

Until 2000 there was no stated necessity for local authorities to consider telematics and local strategies were seemingly competitive adding to local comparative advantage. Only the e-Gov strategy, with its accompanying funding for every local authority – based on successful submission of an Implementing Electronic Government (IEG) statement has led to the recent step change in local authority take-up of telematics based initiatives.

This research has illustrated the nature of local authority intervention around supporting local economic development through the utilisation of telematics. Some have built portal systems; others formulated policies and initiatives for portal creation. All are seen in some way as expressions of local strategy.

The research evidence indicates that within increasing numbers of local authorities there is increasing usage of telematics to support 'informational strategies' and 'technology strategies', but these do not amount to *'transformative'* change in citizen interactions with Local Government through portalised on-line service channels.

Interview evidence indicates that resources available to local authorities are limited, as is their understanding of the technologies, in particular in systems integration of back-office databases that is seen as a major constraint. While this is not to be criticised, as it is mainly indicative of absence of high-level skills and knowledge resources in this complex area, it does account for a major weakness in portal development to date in local authority portal service development. This is recognised in many local authority areas as a key issue to be addressed. In investigating this issue there was evidence suggesting the local authority ICT initiatives were focusing on this 'capability gap' in systems integration, but the effect of these activities could not be quantified.

The findings of the survey are pursued through analysis of a Case Study in Chapter 6.

6. Chapter 6 The Case Study: Broadband Interactive Grid (BIG) - Blackpool and CommunityWise.

6.1 Introduction

The research survey described in Chapter 5 identified factors that influence 'community portal' development in the UK and gave bench-marking reference elements against which this extended case study of the development of a community portal was compared and contrasted.

This chapter considers the single case study of Blackpool (UK), over a two-year period from 2002-2004. Research evidence from the Community Portal (UK) Survey questionnaire undertaken in 2002, and SOCITM Surveys, is used as a foundation for comparison.

Firstly, an historical reconstruction of events from 2001 – 2002 explains the overall context, covering the feasibility studies and leading up to the contracting with Granada for the Community-Wise development. The concept of a BIG infrastructure development, and a Customer First – business process change project are used to contextualise the portal development.

Analysis of events consists of interpretations derived from main themes arising in the on-going relationships at the various levels of analysis. Relationships between various stakeholder groups are described by the culture analysis. The political analysis is overlaid on the same time period.

The description of events and the related analysis begins to meld together as a deliberate result of the removal of the conceptual scaffolding (as described by Walsham, 1995), in an attempt to make the "story" less linear, and more readable.

The Case Study is supported by reference and linkage to the Blackpool Strategic Plan for re-generative development. This is followed by a discussion of events and analysis in relation to the time period covered by the case study. The chapter ends with a summary of the analysis.

6.2 Selection of Blackpool as a major case study

The outcome of the community portal UK survey in 2002 gave a top 10 high scoring civil portals, listed in table 5.3. Blackpool did not feature in this cohort as it did not host a portal site in 2002. However, the council had commenced a large scale 'Customer First' business process improvement project, and development of a portal presence was a significant component part. The opportunity to undertake participatory action research in a portal development from its conception through to delivery was a persuasive argument to investigate the portal lifecycle through a longitudinal case study of Blackpool over a 2 year period.

Since the commencement of the research exercise in 2000, links had been forged with officers in Blackpool Borough Council e-Systems department, to assess the plans and intentions towards community portal deployment. Relationships had been cultivated through attendance at e-Community forum

meetings and although initial benchmarking of the BBC website against SOCITM criteria indicated that the site was not a civic portal (in particular due to no transactional capability) the potential was recognised to observe the evolution cycle of portal development. Rather than embark on research on a portal that existed (i.e. top-10 survey results) a compelling argument existed to select Blackpool as a pragmatic case study of the local situation over a two year period.

6.2.1 Overview of Blackpool

Blackpool is located in the NorthWest region of England, with a national and international profile as the largest seaside resort in the UK. The challenge for Blackpool is to re-invent itself by taking its traditional innovation and applying it to a renaissance of tourism –the core business of the town – while ensuring that residents feel the benefits.

Development of a community portal gateway and broadband infrastructure is a key component of the strategic plan objectives.

Blackpool's regeneration vision of a world-class resort for the 21st Century is expressed through a master-plan for the resort, and this translates into specific aims in the Strategic Plan. The Council believes the Government's proposed relaxation of gaming laws offers opportunity to kick-start a programme of regeneration that will re-position Blackpool as a premier resort for the 21st century and vastly improve quality of life for local people.

The e-Services Directorate within the Council created the vision for e-Service delivery and have responsibility for vision and development. A key player (and activist) was e-Services Director – Philip Baron, who emerges as the Architect for the systems strategy and main driver for the development.

6.2.2 Implementing Electronic Government Statement in Blackpool

Formative concepts of e-Government were discussed in Chapters 1 and 2. The UK government has now committed substantial sums of money to achieving the introduction of electronic services' delivery and the development of e-government. At national level, in addition to the normal investment and revenue spending by departments and agencies on the development of IT infrastructure and on Web sites and intranets, an additional £1billion was invested over three years from 2001-2004 to boost central government organisations' presence on-line. (Government on the Web II, National Audit Office, 2002.) Responsibility for driving these initiatives has now shifted from the former Department for Transport, Local Government and Regions (DTLR), to the Office of the Deputy Prime-Minister (ODPM).

Blackpool has submitted Implementing Electronic Government (IEG) statements for each of the four phases required by the government ODPM since 2001. Each of the phases attracted funding for the local authority. IEG 4 reporting was in December 2004 and a significant change introduced a requirement for statement on Efficiency Gains through eSystems deployment.

6.2.3 Joined-up Government Services through Portals in Blackpool

The Blackpool IEG statement committed the Council to electronic service delivery as the main focus for self-service for citizens; supporting both the front and back-office, re-engineering of core processes and providing the forum for open government.

In particular the Blackpool IEG statement asserts:

> "the Council recognises that portals are an extremely powerful means of presenting a joined up service front-end, based around customer needs. The Council is looking to use a town portal as the umbrella/glue to join up services through the assistance of technology."
>
> (Blackpool IEG Statement, 2003)

The Town portal is (www.blackpool4me.com) (accessed Feb 06) based on:

- Community Priorities and Blackpool Challenge Partnership structure,
- Web learning environment –Learnwise –linking National Grid for Learning, and NorthWest Learning Grid projects,
- Community Information through the Libraries, the College and the Learning Network,
- a Virtual Town Centre,
- Kids and OAP zones,
- links to DirectGov and national projects.

6.3 Broadband Interactive Grid (BIG) project

A significant component of the IEG plan is the Broadband Interactive Grid (formerly Blackpool Interactive Grid). This infrastructure development plan

sets objectives and targets from 2001-2008 to establish a Broadband Interactive Grid, which aims to provide the platform/framework for the interactive citizens, businesses, tourists, council and other partner agencies.

The key objectives link to the national and local strategic plans:

- Blackpool masterplan (local) – Everyone in Blackpool, by 2006, will have the option to access the Internet from home using broadband technology (single point) and a choice of devices (PC, iDTV, etc).

The 'grid' nature of the plans involves consolidation of the existing Council, College, Schools, Libraries, Private Sector, networks into a unified 'grid' network, embracing the concepts of a user centric approach, giving self-service access for citizens to interactive channels of information.

Four specific strands are proposed, with Blackpool Challenge Partnership as the central hub:

- Establish the ICT infrastructure.
- Interactive Environment / Blackpool Portal
- Develop an on-line learning culture
- Joined-up approach to local services

Funding streams included SRB6, Neighbourhood Renewal, ODPM, and EU Objective 2.

The seven-year plan involved preparation of a feasibility study undertaken in Year 1 (2001). A Partners workshop led by Anderson consultants was held in October 2001 to assist with planning and give framework to the 'BIG'

ambitions. Workshop outputs assisted in *'defining the physical infrastructure, who it will serve, and what it will look like'.* The vision, scope, objectives, and deliverable outcomes were established through this workshop report – sufficient to give a way forward with action points and milestones.

In discussions with Philip Baron in 2001 it was reported that a business case was being prepared with costed requirements to commission a feasibility study. An unsuccessful bid to European Regional Development Fund (ERDF) (January 2002) for grant support for the feasibility study led to a further review. A further bid followed to the government Department for Transport, Local Government, and regions (DTLR). This now included two other local authorities flanking Blackpool, namely Fylde Borough Council to the south, and Wyre Borough Council to the north. Baron said that this would increase the impact of the bid. A concession to the additional partner authorities was the original title Blackpool Interactive Grid was re-badged as Broadband Interactive Grid, to reflect the wider than Blackpool representation embracing all three local authority partners coterminous with the Fylde Coast of Lancashire.

The outcome of a six month feasibility study supported the 'BIG' concept and concluded that:

> "To effect the creation of local 'joined-up' government and integrated local public services, the supporting service delivery and access infrastructure mechanisms should be progressively merged and jointly managed by a strategic partnership of public and private sector organisations. The overall

> focus will be on the quality of service delivery and on ensuring equality of access for all service users, thus closing the 'digital divide.'
> This merged service delivery platform will provide a forum for community focused services, and will enable a co-ordinated approach to ICT related regeneration projects. The partnership working arrangements instilled via the BIG project will provide the example for future collaborations in the region. The BIG infrastructure would also provide the sub-regional facet of the e-infrastructure supporting the northwest's regional strategies."
>
> (Broadband Interactive Grid Feasibility Investigation report -Aug 2002)

The concept of a service delivery 'portal' was specifically addressed as a declared intention of the 'BIG' project feasibility outcome, having been discussed in community user consultation using a demonstrator portal to raise awareness of capability. The 'portal' recommendation stated:

> "One significant potential of e-Government strategies is the capability to provide access to services from many providers via a single point of contact, *'joined-up government'*. This 'one stop shop' principle is a DirectGov."
>
> (Broadband Interactive Grid Feasibility Investigation report -Aug 2002)

The feasibility plan gives specific recommendations for three development areas to be pursued as separate but converging strands of:

- Community,
- Services, and,
- Infrastructure

(these reflect the NorthWest Development Agency (NWDA) areas of operation defined as User, Content, and Access)'.

These separate strands combine to enable the integration of services and delivery mechanisms.

This BIG project plan was endorsed by the three Fylde Councils' and now forms a key-plank of the IEG response for the Fylde Coast area. The feasibility plan also aligns with the strategic domains within the 'Connected Northwest' ICT Strategy for England's Northwest (Northwest Development Agency / Northwest Regional Assembly), which outlines the challenges that ICT presents, the public policy drivers, and the need to intervene through strategy at a regional and sub-regional level.

6.4 e-Community Strategy

A parallel initiative to the Broadband Interactive Grid (BIG) feasibility study was the concurrent preparation of the e-Community Strategy for Blackpool. This strategy complements the Community Strategic Plan.

An e-Community Partnership forum was created in 2001 and during 2002 activities included an exhibition to raise awareness of potential technology available to support e-Community development.

> 'A consultant – Karen Preece – undertook an in-depth audit of existing capability and continued to identify needs through gap analysis to produce a detailed report on e-Community preparedness. This has informed the development of a strategic response as an e-Community strategy for the town.' (Preece, 2002).

The e-Community's partnership focus is on the development of the potential of Blackpool residents, the skill level of all citizens in the resort, and businesses in the borough, by considering the community as a whole. The shared vision is expressed in the following statement:

> "The vision is for a Blackpool that is a vibrant, healthy, inclusive, safe, and prosperous town where technology acts as the catalyst to people from all walks of life, enabling involvement, creativity, innovation, inspiration, knowledge, and a community spirit."
>
> (source: Blackpool e-Community strategy, 2003)

The e-Community partnership between Blackpool Schools, Lifelong Learning, Libraries, Colleges, Granada Learning, Lancaster University, and Blackpool Council's new Access to Services programme has been established to develop one single point of access for a Blackpool community portal known as CommunityWise. This was the vehicle by which citizens find information, and share common interests and experiences, through interaction and debate both within and outside of Blackpool. This new portal is the data content store for Blackpool, named ***www.blackpool4me.com***.

6.5 Linkage to Research Survey outcomes

An ambitious Business Process Redesign 'Customer First' project, has been a main driver in moving the Council forward to meet the Office of the Deputy Prime Ministers (ODPM) Best Value Performance Indicator 157 (BVPI 157) target for e-government enablement.

Customer First has been a significant component in providing enabling technology to develop a Knowledge Base that allows staff to deal with a much wider enquiry base at the first point of contact. The portal development also facilitates improved access to council information and enables citizen self-service through newly created interactive service channels for on-line transactions between citizens and government.

A Citizen Relationship Management (CRM) system provides the integration of existing back-office database systems to the web portal front-end – blackpool4me.com. The portal development was underpinned by the CommunityWise project within the generic Customer First initiative.

A key finding from the Community Portal UK Survey 2002 is the need for interactive service channels enabling citizen access to local government services. System Integration is needed to interface back-office systems and databases to the web front-end of the portal gateway. In Blackpool this is now being facilitated by the CRM system. The development team has successfully completed the business process analysis and implemented the integration between portal front-end and existing back-office systems.

6.6 Background to Design and Development of CommunityWise

Development of the web technology based community portal in Blackpool was initially built on Granada Learning Virtual Learning Environment (VLE) called

LearnWise. The community portal product was a variant of LearnWise given a prototype name of CommunityWise.

Following 2 years of re-development of the versions of Learnwise product, due to insurmountable difficulties the decision was taken to abandon the project and seek an alternative technology / software solution. This was a significant event negatively impacting on the portal development. The outcome of deliberations and consideration of options was to keep the development in-house using an existing product – Microsoft Document Management System. Early in 2005 this became the underpinning software to support the ***blackpool4me.com*** portal.

Blackpool Borough Council chose Granada Learnwise as their Virtual Learning Environment (VLE) for all Blackpool Primary and Secondary Schools (43 Schools). The VLE was installed as a centrally hosted configuration, with all schools attaching to the host at a minimum bandwidth of 10Mbit/sec.

Partnership discussions with Granada led to meetings with the original developers at University of Wolverhampton, based at the Learning Lab' in Telford (UK). It was subsequently agreed collaborate to develop the VLE product for wide community portal usage. This variant on the original software was prototyped as 'CommunityWise' during the development phase. A contract to develop CommunityWise existed between Blackpool Borough Council and Granada, with an intention to profit share on future sales to other local authorities.

CommunityWise was selected as the Blackpool portal web front-end to access services via a variety of devices – PCs, iDTV, Kiosks, etc. A requirement specification was developed as part of the contracting to give a conceptual model against which to develop software functionality.

Software design and development was undertaken by Granada, with a team of programmers based in the North-East of England at Newcastle. Iterative development refined the design before final installation in Blackpool and commercial launch of the CommunityWise product that was soft-launched Spring 2004. The *'soft'* nature of the early launch was due to unresolved problems that prevented a full roll-out of a functioning software product.

The demise of Communitywise was due to a both *people* and *technology* problems. The people problems were particularly exacerbated by distributed development teams, in different organisations i.e. Council and Granada, and with long chains of communication that fostered misunderstanding and delay. Technology problems were acutely affected by major version changed in the parent product Learnwise impacting on Communitywise. Unpredicted consequences of changes in Learnwise in new versions affected the Communitywise software functions upon implementation. Issues and problems continued to emerge throughout the development period and management intervention was unable to resolve them.

The consequence of taking an existing product, i.e. a VLE, and trying to re-use it in a different form and for a different purpose caused major delay and escalating costs to overcome problems, well beyond the original sums agreed at the contracting stage. The council have successfully obtained a full refund of money from the Communitywise investment and committed this funding to support additional developer expertise in the blackpool4me team. The portal is now available on-line as a service for citizens.

The systems integration of the CommunityWise web front-end portal with the Lagan Frontline Citizen Relationship Management software is introduced and discussed in Section 6.8 and 7.5.3.

6.7 Blackpool Case Study - Issues and Relationships

Mapping the issues facing community portal developers, (or portal development teams), was a key element of gaining insight into the development process. Understanding relationships between local authority and central government developers was important in this study. To investigate any relationship or linkage, stakeholder analysis (Mitroff, 1983) was utilised as a tool.

Latour (1996) was useful in identifying groups of "actors"; offering insight and considering the relationships and interests between the actors in the network of relationships, and other levels of analysis. Interestingly, the consideration of "non-human" stakeholders; a feature of actor-network theory (Latour, 1996)

became relevant to the Blackpool Case Study, particularly when considering the inscribed interests within technology, such as the need for a structured approach to community portal development.

To achieve this an interview was conducted with an officer in each of two Central Government departments:

- Cabinet Office / eGovernment Office (Bill Edwards, Alan Schofield, John Stephenson)
- House of Lords IT Office (Paul Gibbons)

These interviews highlighted the cultural gap between central and local government developers and portal architects. Analysis of relationships was used as a vehicle for discussion with Blackpool officers' to expose issues surrounding absence of dialogue between local and regional/central government departments. Exploring the relationships was important in drawing out further useful lines of inquiry. The same issues were raised in interviews with Central Government officers to gain the counter-view in an attempt to understand both sides of the argument and thereby make sense of the background to this perceived problem. As both sides were challenged by this problem it was seen as important to critically examine issues that are perceived barriers to effective working between Central and Local Government. Interviews in the Parliamentary IT department (House of Lords Office) and the e-Government Office (Bill Edwards, Managing Director of DirectGov, The eGovernment Unit, Cabinet Office), indicate that central government officers were unable to identify systematic opportunities for

meaningful dialogue with local government officers engaged in portal development.

This was replicated in Blackpool with local government officers being unable to identify how to engage in dialogue with central government officers. This perception is reflected in the language used in both central and local government departments. For instance, there were disparaging remarks by a local government officer regarding UK Online and the Government Gateway, as "completely inadequate" (Blackpool Officer C –in 2003) suggest the mismatch between central government 'offer' and local needs at this time. Pursuing this comment in interview to understand the underlying feelings, it became apparent that the 'not built here' syndrome was a factor. However, the absence of any systematic linkage between central and local developers has some bearing on the level of feelings involved. It seems to be the case that the structural conditions underpinning local authority operations do not allow for direct communications with central government departments and this isolation leads to a need for a 'cultural buffer' between the local and central portal development staff in government departments.

Such difficulties are reinforced by Zihni (CIO Birmingham) in section 4.4. In further interviews there are mixed views amongst senior staff on whether such a 'buffer' is feasible. There is a view held by some that the potential offered by advanced telecommunications technology, such as video-conferencing would lead to a dialogue and mutual sharing of views and opinions, but the initial trigger opportunity for local/central discussions seems elusively absent.

Other perceptions indicated that this would offer too great a challenge. In interview with a local government officer it was felt that the perceived gap was "unbridgeable". (Blackpool Officer C – in 2003).

An inescapable conclusion is that a silo mentality prevails in both local and central government departments, reinforced by constraining legislation in a way that makes it difficult to surmount the existing cultural barriers.

With regard to data issues in longitudinal process research, Pettigrew (1985a) acknowledges that it is difficult to know when to stop collecting data and when to undertake more interviews. There is no upper limit on interviews other than the considerable time taken to arrange, undertake, transcribe and analyse the interview, and the problems of being 'swamped' by data. In a single case study there is also the issue of ensuring that access continues for the agreed period set at the start of the study. The importance of making a valid contribution to the interviewees is also of significance as they are being asked to give up time to meet and discuss issues, and can reasonably expect something to come from it. In this case, feedback to participants came in the form of informal comments or more formal reporting. Multiple viewpoints were gained and represented by interviewing staff at various levels of analysis, and often asking the same question. As far as was possible, the data were checked with archival and other sources, for instance the management viewpoints were checked against minutes of Council meetings, and actions arising.

6.8 Blackpool Case Study – Application of Context-Process Analysis

The research investigation of community portal development by Blackpool Borough Council (supported by 6 mini-case studies) involved attendance at meetings, presentations, events, neighbourhood meetings, eCommunity forums', and interviews. Annex 5 lists the chronology of interviews and attendance at meetings that informed the research process.

Figure 6.1 gives a visual representation of the different contextual levels examined over a longitudinal period from 2000-2005. This diagram presents the different contexts that have been investigated over the two year period, and as such maps the development and progress of the community portal in Blackpool that has a prototype name of Community Wise.

Throughout the case-study period the following contexts have been identified, observed, monitored, and recorded as discrete perspectives including:

- External influencing bodies
- Architect / Vision /Political drivers
- System Developer
- Citizen Users

This has enabled a clearly delineated set of inter-dependent levels of analysis.

The early vision is manifested in the Broadband Interactive Grid vision as addressed in Section 6.3, and further analysed in Chapter 7. This multi-faceted scheme included infrastructure development to underpin the service

delivery intended for citizens of Blackpool. The service delivery portal was initiated as the CommunityWise development. The CommunityWise software product development was commenced with Granada, based on the existing Granada Learnwise Virtual Learning Environment product 'Learnwise 2', as described in section 6.6. CommunityWise as the core software Blackpool citizen portal ***blackpool4me.com***, and the Lagan Frontline Citizen Relationship Management (CRM) system were the start-point focal computer systems for the Blackpool development. The social context in which they have been developed and deployed has been influenced by People and Technology factors:

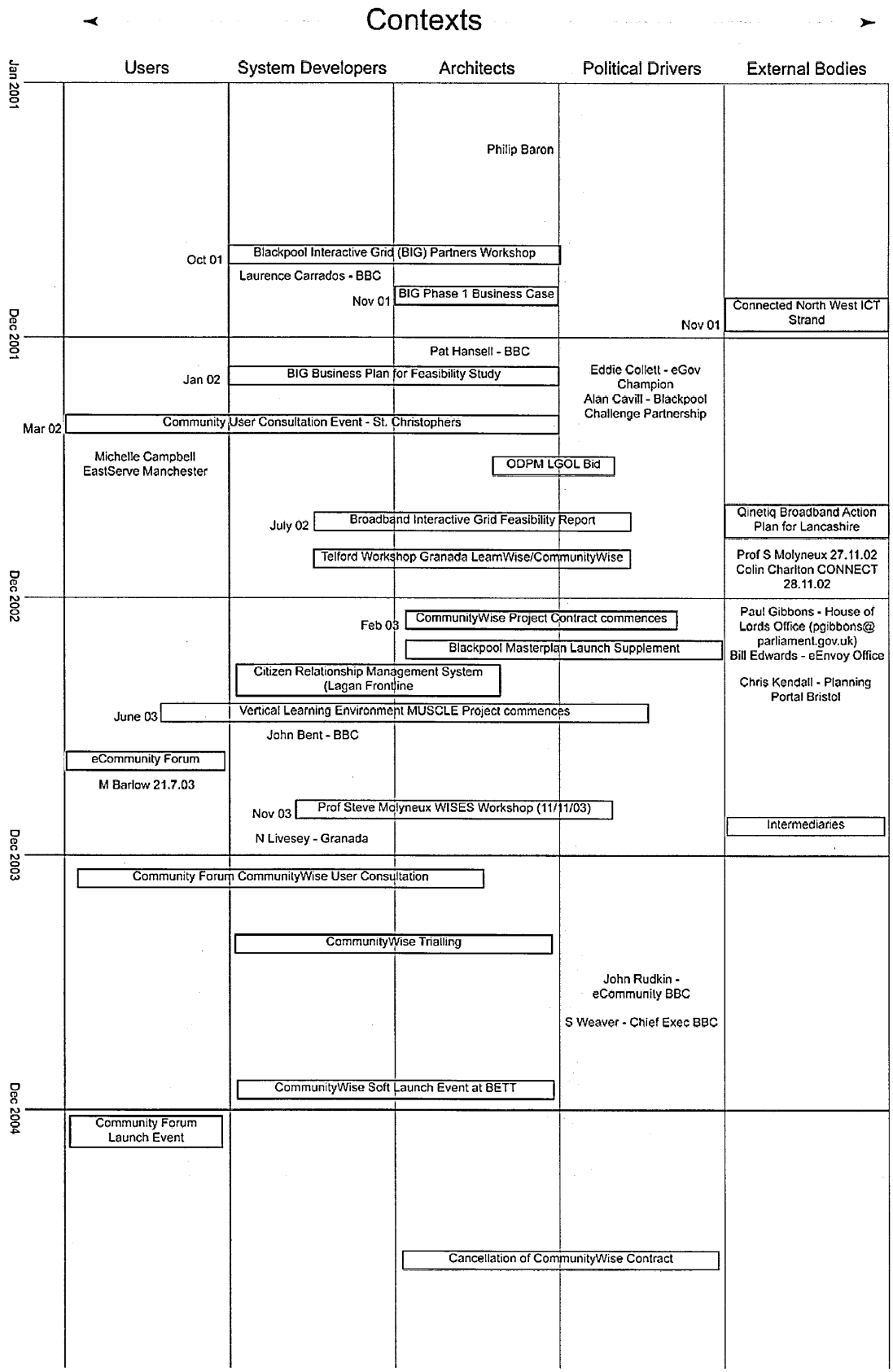
People - the set of participants concerned with the development of these systems. The participants include:

- Citizen Users
- System Developers
- Senior Managers
- Political Leaders e.g. Elected Members of Local Authority

Technology - the infrastructure available to support the portal system.

- CommunityWise
- Lagan Frontline CRM
- Broadband telecommunication services

figure 6.1 **The Blackpool Case Study Contexts**



The processes under examination have included the development of the hardware and telecommunications infrastructure of the Broadband Interactive Grid (BIG) in Blackpool; the development of CommunityWise; and the procurement and configuration of the Lagan CRM software. The concomitant development of the Customer First project arose as an emergent outcome of the existence of the other processes i.e. the portal enabled remote access for citizens to interactive service channels created via the CRM system to existing Council databases. The vision that put these developments in place created the opportunity for the Council to re-think its whole processes for handling citizen (customer) enquiries.

Citizens in Blackpool were involved in the process of consultation in the development of CommunityWise from an early stage. Creation of an e-Community Forum group, with 'actors' from key stakeholder groupings including Education, Social Services, Council Departments, Police, Health, Voluntary Sector, etc., was a significant factor in evolving the vision and matching this to services that would be valued by citizens. An enabling factor was the existence of Neighbourhood Forums in many Council Wards in Blackpool. The regular opportunity to routinely consult at citizen level, and thereby build support, was crucial in gaining support for the overall development and funding of the projects. The previous history of development had been to fully develop systems and deploy without user consultation, and the richness of insight gained by piloting the system and getting user feedback greatly assisted the development exercise.

People involved in the development process include:

- Professor Steve Molyneaux (external consultant CommunityWise)
- Eddie Collett (Blackpool Councillor – eGov Champion)
- Philip Baron (Blackpool Head of eSystems)
- John Rudkin (eCommunity Officer - Blackpool)
- Laurence Carradus (Systems Developer)
- John Bent (Systems Developer CRM)
- Mavis Barlow (Blackpool Citizen – Neighbourhood Forum)

This list is a sample of the total number of people involved, but it is representative of each of the discrete levels of contextual analysis groupings. A key 'actor' and critically important role has been the behaviour and leadership of Philip Baron.

Interaction at the boundaries of each of the discrete levels from 'Citizen Users' through to 'External Influencing Bodies' to link the User needs and perceptions to the System Developers, and communication of the vision from the Architects to the developers who have to implement their designs. Whilst the boundaries that exist between each group identified in this Case Study assist in defining compartmentalised roles, these boundaries also act as constraints in shaping the overall structure and its ability to respond to requirements, whether they are originated from Citizens or Politicians / Architects. The richness of insight obtained by straddling each these areas as

an observer gave a 'crows nest' view and a unique overall perspective of the whole picture; the jig-saw fit of each element, and the dependencies of each area on other influencing factors and behaviours.

From evidence gained through the Blackpool Case Study it is possible to identify culture differences that were found to exist between Central and Local Government developers. There is an absence of collaborative development and a gap in understanding (Musgrave, 2005). Brown and Duguid (1998, 2001) point to the positive effects of "translators, boundary brokers, and boundary objects" in negotiating epistemic differences among communities that do not share practice. The dichotomies that are found between central and local government developers (and *civic* and *civil* portals) would benefit from this analysis to explore the synergies and dissonances among these communities.

Problems exist with lack of joined-up *people* systems, and lack of joined-up *technology* systems. Use of Web Services as part of a technology shift towards a Service Oriented Architecture (SOA) (section 2.4.4) offers potential solutions to the technology problem but challenges remain in joining-up the people systems. The case study finds that Blackpool has promoted 'citizen engagement' in a participative approach by enabling those affected by the new systems:

> "to contribute to the design of their own futures by actively participating in, and influencing, the change processes".
>
> (Blackpool Borough Council eSystems - Baron, in 2004).

Evidence from the Blackpool Case Study indicates that development is based on project-like 'windfall' capital and revenue funding streams that are time limited. Sustainable portal initiatives require a trajectory towards (and strong linkage to) mainstream service development. Comprehensive Performance Assessment (CPA) is giving a new linkage to on-line service development. The necessity to meet new criteria linked to the CPA process will shift portal development closer to the core of local government. Linking this process to the IEG Phase 4 plans (following the Gershon Review) each local authority in December 2004 was asked for statements on 'efficiency gain'. eSystems are moving to the 'core' of service delivery for local government and will be subject to the same performance indicators as other services.

Over the longitudinal period from November 2002 (Telford Workshop) it was possible to observe and record the chain of events associated with the development contracting with Granada Learnwise for the production of the Communitywise variant of the Learnwise virtual learning environment (VLE) product. (see section 7.5.4). By January 2005 the council recognised that problems with Communitywise were insurmountable and a decision was taken to abandon this development. The fact that the Communitwise software was based on an existing VLE had meant that it was difficult to change the functionality sufficiently to meet the requirements of the council as a civic portal.

The decision to terminate the Granada Communitywise contract was a major issue that significantly delayed the development of a Blackpool community

portal. Having abandoned the Granada initiative an alternative in-house portal development project was commenced. A civic portal 'Blackpool4me' has been created, based on Microsoft Document Management System, and implemented in January 2006.

6.9 Mini-Case Studies as Comparators

The major case study of Blackpool was complemented by a concurrent activity intended to reinforce the process of portal scrutiny. Findings from the UK portal survey 2002 identified local authority portal sites at an advanced stage of development and on-line service provision. The national portal Directgov (formerly UK Online) was used as a benchmarking example along with initially four other portal sites as mini-case study exemplars. These were selected from high scoring sites in the 2002 survey. A sixth portal was also included to give a rural perspective on portal development.

Appendix 4 (and 5) give details of interviews and visits undertaken to inform the overall fact-finding process. Participation in e-Community group meetings as an observer was an important factor in gaining insight into evolution and growth of citizen services in Blackpool, and visits to the mini-case study sites was a bolstering activity support the research.

The highest scoring portal in the 2002 UK survey was UK Online (now Directgov). The attributes and functionality were investigated through a visit to the e-Gov office (see Appendix 4). This revealed a gap between central and local government in the development process. In benchmarking the

development of portal services in Blackburn in the NorthWest of England it is appropriate to understand the synergies and dissonances between Blackpool and Blackburn and the relationship to Blackburn on-line, Blackburn East On-line (BEON), and local / central government cultural differences. As an early adopter of Information Age thinking – 'Blackburn with Darwen' as a unitary authority produced a strategy paper, in early 2000, titled "Active Knowledge" that set out clear and coherent vision and value statements for e-Commerce, e-Learning, e-Community, e-Governance, along with infrastructure issues. The goal was to develop the concept of "information literacy" and the gateway access point was a portal called Blackburn World (www.blackburnworld.com). (accessed February 2006). This followed on from other regional portal sites developed under the UKWorlds branding, such as the MerseyWorld model (www.merseyworld.com) (accessed February 2006).

The BlackburnWorld portal site contains community information, web-shop creation, web-site hosting, and other transactional interactive services. As an early to market portal site BlackburnWorld was innovative in 2000, but a problem was sustainability. Although funding streams enabled the early development and hosting of this portal, inadequate resources were in place behind the scenes to support and sustain content development or mediation of the community bulletin board services. Soon after the launch and early promotion and publicity the site lost its freshness and lapsed into a relatively moribund state.

This contrasts sharply with the fortunes of EastServe (Manchester) portal that is geographically on the doorstep of BlackburnWorld. In the EastServe development community ownership is an important difference and community content generation is sustained through Community Champions 'grown' through development and training undertaken in local IT centres. Simple content authoring tools have been provided to publish content into allocated areas of the EastServe site and the site has considerable amounts of community information and local content.

A further Community based example of an early adopter portal that proved unsustainable was the Craigmillar (Edinburgh) Craignet development. This high profile portal development has effectively imploded, due to people and political differences.

6.10 Reflections on the Case Study of Blackpool

Throughout the 2 year period (2002-2004) of the Blackpool case study the research probed the experience and interactions of portal development, by observation of events at the level of external bodies, political drivers, portal architects, e-systems developers, and citizen users. The local scenario of Blackpool was also contextualised against national portal development.

Chapter 7, section 7.5.5 addresses the findings from the Blackpool case study, illuminating the fact that 'people and technology' (Mumford, 1997) issues were present throughout the development cycle, both at the local level

with peer-peer relationship problems. Issues of inadequate communication between political representatives, vision architects, portal developers, and citizen users (Heeks, 1999) were causal factors in misunderstandings arising between parties to the process. Other instances of communication problems occurred between Blackpool Borough Council personnel and Granada managers and developers involved in the abortive development of Communitywise, and the eventual cancellation of the contract with Granada at the end of 2004.

People issues and misunderstandings through inadequate specification of requirements were compounded by technology changes as different versions of the original Learnwise VLE evolved over the 2 year case study period. Delays by Granada in implementing changes and fixing broken software elements created lack of confidence in Blackpool personnel who felt the product was forever in a 'beta' version state.

Inability to resolve these issues meant that citizens were unable to use blackpool4me.com, and any attempt to raise awareness of the forthcoming portal were frustrated by problems in non-functioning portal elements. On reflection, the Communitywise development was a major failure that caused significant delay. Conversely, the time delay in Communitywise development enabled considerable citizen engagement through local forum activities and e-community consultation to plan service delivery channels to meet user needs. Similarly the delay in Communitywise gave stronger focus on Lagan Frontline implementation to give on-line interaction with back-office services in BBC.

In-house development improved the span of control with all staff managed by BBC. The civic portal presence blackpool4me.com is operational, based on Microsoft Content Management software, with embedded links for interactive citizen services. The portal, with its back-office links to the Citizen Relationship Management (CRM) system (Lagan Frontline) is now the system to deliver the Customer First approach to council service access by citizens.

6.11 Chapter Summary

This chapter presented a single case study of Blackpool Borough Council Unitary authority, and their activities in strategic use of telematics, in particular as a component of its response to the Implementing Electronic Government (IEG) initiative, for local economic development.

Over the three year plus period of observation the Broadband Interactive Grid (BIG) concept has been subsumed within the generic over-arching Customer First project. Customer First has become a business process change project. The CommunityWise customer facing portal prototype is now available to citizens but problems exist for its future sustainability. Linkage exists to the Citizen Relationship Management (CRM) software application (Lagan) that gives interactive capability for on-line service channels.

Overall, this case study has investigated the nature and role of a local authority in its capability and potential to effect local development through the

use and deployment of telematics and portal technology. Over the period of the Case Study, bidding opportunities have produced successful cash injections to underpin project work and awareness raising on CommunityWise has continued through to familiarisation and training on use of the software environment.

Chapters 7 and 8 provide a summative analysis of the research methodology, theoretical framework, survey, and Case Study, and the overall contribution to knowledge of the research .

7. Chapter 7 Contextualisation of Research Findings: An appraisal of Community (Civic) Portals for Local Authorities in the UK

7.1 Introduction

The purpose of this chapter is to:

- Answer the research questions
- Synthesise the practical and academic perspectives presented in Chapters 3 and 4
- Contextualise the research work undertaken in Chapter 5 and 6 and analyse the research findings

Evidence drawn from the literature review and theoretical appraisal is considered along with the survey outcomes and case study material, to assess the role and relevance of civic portals for local authorities in the UK.

An eclectic selection of elements from theories outlined in Chapter 3 has been used to explain the inter-related nature of *people and technology* issues, and their influences on portal development and evolution. A synthesis of theory is used to both rationalise and critique the actions of actors in the case studies and research interviews, and contextualise their situation in a time of rapid technological change surrounding the development and use of telematic portal systems.

Lessons of the study and recommendations are considered in Chapter 8.

7.2 Consideration of the Research Questions

The Research questions were introduced in Chapter 1, section 1.1.2 (p.21-22) of this dissertation. This section discusses these questions and presents findings derived from the research exercise. To answer these questions, many issues were considered to link real-world activity to academic theoretical perspectives, to gain insight into portal systems development. The emergence of information systems development for community portals in the context of *civil/civic* networking is discussed in Chapter 2, emphasising the importance of creating services that are valued by people who are the service recipients.

Answering the Research Questions, salient issues are:

- ***Question 1.*** - What makes a first class community portal?

- *Discussion Q1.* - Interactive on-line transaction services for citizens are a hallmark characteristic in defining civic portals. Integration of back-office systems with the portal 'presentation' front-end systems is a requirement to achieve this. Portals are found to be socio-technological systems (figure 8.2, p352), where transactional on-line services (SOCITM, 2003) are a defining characteristic of civic portals, emulating the functionality of enterprise portals in the commercial world. It is *technology* innovation that now gives the systems

integration capability to achieve this capability. Concurrently, the *people* issues of on-line content sharing are important to give citizens' access to services and information that are valuable and valued by them. Technological determinism holds that the development of technology follows its own logic, and the technology itself determines its use (Winner, 1977). On the other hand social theories hold that society and its actors develop the technology it wants and uses it as they want, implying that technology in itself plays no role. Literature research shows that many academics adhere to an intermediate position, somewhere between technological determinism and social constructivism. The majority of accounts lead to the important, yet crude, insight that ICT has both enabling and restricting implications (Orlikowski, 1991). This research investigation considered the interplay between *People* and *Technology* and exposed a third influencing factor as the need for *Common Purpose*. Lack of common purpose is identifiable in the separate positions held by UK Central and Local Government in their portal development strategies. This factor, coupled with lack of Citizen Engagement, are felt to be significant issues currently stifling progress in UK Government portal development. Gurstein (2004) stresses the need for Citizen Engagement in the process of community networking, and Schuler (2005) supports this argument indicating the need for citizen involvement to overcome the inertia, otherwise the development becomes unsustainable. Actor-Network theory was an analytical vehicle used to unpack the complexity and expose relevant issues, in

this case the identification of *Common Purpose* as a third factor affecting community portal development. Policy-makers should take heed of these findings.

- ***Findings Question 1.*** Citizen engagement is deemed to be a critical success factor for a community portal (Gurstein 2004, Schuler, 2005). The research findings emphasise a necessity for a blend of 'joined-up people' systems, 'joined-up technology' solutions (Mumford, 2003), and common purpose. A holistic approach to portal development as a socio-technological endeavour is required whereby:
  - *Joined-Up People* systems include maximum levels of support from the highest level i.e. Chief Exec (and Elected Representatives) through to engagement with individual citizens and citizen groups.
  - *Joined-Up Technology* includes solutions that integrate back-office 'existing' database systems with the portal 'web-based' front-end, to give interactive service channels for citizen interaction with government departments.
  - *Common Purpose* coupled with clarity of understanding cascaded down from the Vision, Architect, Developer, User; and in a reciprocal direction from the User needs upwards, gives a Virtuous Circle of understanding.

- ***Question 2.*** What are the elements, characteristics and emergent properties that constitute an effective 'portal' for e-community development?

- *Discussion Q.2* - The research findings from the UK Portal Survey 2002, and the Blackpool Case Study, revealed low percentage of 'Transactional' portal services in Civic sector development. Two distinctive types of portal are identified (in Section 2.6.3) as *civic* and *civil* portals. Consideration of the UK DirectGov national portal does not find evidence of citizen engagement and Edwards (2004) describes a model that advocates access to 'Intermediaries' as service providers, accessed directly from the DirectGov portal, rather than via a Local (Government) portal.

  Comparison of DirectGov and local government portals with the model option types of civic, civil, and enterprise portals, each with their distinctive nature, reveals a polarisation whereby the UK portal DirectGov possesses characteristics that are biased towards the commercial enterprise portals, whereas local government *Civic* portals have affinity with the community developed and supported *Civil* portals. This conceptual polarisation of central government and local government portals explains the lack of dialogue to be found between central and local government developers. The outcome is that the business driven central government portal provides citizen access to national level on-line services but does not satisfy the local needs for information content bespoke to sub-regional local community needs. Without access to developer resources, that are unrealistic for a local authority, a gap persists between citizen needs and UK Government (central and local) ability to satisfy these needs.

- ***Findings Question 2.*** Community Portals, and their sub-types of Civic and Civil portals have potential to contribute to e-Community development. e-Government is a principal driver for *Civic* portals, and community communication is an influencing driver for *Civil* portals, but to date (2005) this potential is under exploited (Schuler, 2005). There is a need for inclusion of the following:

  Elements

  - Interactive service channels that are valued by the citizens they are intended to serve. Such channels create on-line opportunities for citizens to interact with government departments, and their services.
  - The 2002 survey identified a dearth of simple content authoring tools. Provision of tools for content production is an important element of a CP solution.
  - Support for citizens as users, through training opportunities to familiarise them with the functionality, capability of the new service channels, and tools available for content creation. (e.g. content developer toolkit). The Case Studies and 2002 survey highlight the absence of training for citizens as an issue. Evidence of the success of the Planning Portal in the UK (see 2.5.8) as a holistic service confirms this requirement.

  Characteristics

- High performing 'transactional' (SOCITM, 2003) community portals are characterised by high levels of citizen participation (deCindio, 2002) in content development, and regular updating of information to maintain the currency and relevance of content.

Emergent properties

- Such properties arise once a critical mass of citizen user is achieved. The combination of joined-up 'transactional' level technology, complemented by joined-up people facilitates on-line communications and access to service interactivity. This is evidenced by the experience of case studies, and is a significant factor in sustainability (Gurstein, 2003) of a community portal.

- ***Question 3.*** - What telematic technologies and systems are best suited to 'portal' delivery?

- *Discussion Q3.* - During the research period (2000-2005) the hard technologies of *telematics* have given way to the softer information approach of *informatics,* underpinned by telematic systems. This positions the data, information, and knowledge as the key driver purpose, and the facilitating technology as the underpinning element. The emergence of community informatics (Gurstein, 2000) from the Civil Society (Bytheway, 2005) has become the generic subject area straddling computer science and social science research disciplines.

Telematic systems have themselves undergone a step change and the key concept of a Service Oriented Architecture now enables systems integration in ways that were previously impossible. However, this architecture is no simple solution and serious work is needed at telematic systems level to enable on-line transactions (Civic), and local community level on-line content publishing (Civil).

- ***Findings Question 3.*** Integration of Web front-office (presentation layer) portal into existing back-office services, through use of a Service Oriented Architecture (Olivier, 2004) and Web Services (Erl, 2004), are a key facilitator for portal systems development.

- ***Question 4.*** - How do these telematic systems interact for seamless 'portal' operation?

- *Discussion Q 4.* - The civic portal model (figure 2.3, p107) described in Chapter 2 has functional characteristics similar to an enterprise portal (section 2.5.8). The portal presentation 'front-end' enables delivery channel options to give access to the portal services from a range of devices and media methods. Adoption of internet technology 'web' standards / protocols permits this. Middleware 'adaptors' and use of 'web services' standards allow connection between existing 'back-office' database systems via data translation rules.

- ***Findings Question 4.*** - Adoption of Internet technology standards, and Web Services enable different systems to integrate and share data between disparate back-office applications, and other external portal channels. Disparate systems can thereby be linked to present as an integrated 'seamless' system despite the complexity of individual component applications.

- ***Question 5.*** - What is the potential for telematic systems to support community regeneration via portals?

- *Discussion Q5.* - Governance issues of gaining advantage through Community Technology is an international problem. The geographic situation may be different, but common factors are found in existing Case Studies e.g. VICNET, Australia. An over-arching issue is the extent to which governments are seeking to create more effective structures to continue what they regard as a valuable asset – Community Building through ICTs. The alternative is to hand over the problem to commercial vendors and enterprise solutions, which cannot meet fundamental needs in community networking or portal development. The conclusion offered in the VICNET case study (Schauder et. al., 2004) is construction of a social framework with a new set of partnerships that supports a 'dynamic – democratic' use of technology. This involves dynamic interaction of people and

technology at the grassroots, in conjunction with quasi-governmental bodies/agencies.

- ***Findings Question 5.*** - Community enterprise supported by community portal technology have potential to enable communication and service interactions in transformative ways, but the early hype linked to claims of regeneration capability remain unfounded. O'Neill (2001) identifies five areas of potential contribution for community networking / portals:
    - Enhancing strong democracy,
    - Increasing social capital,
    - Empowering individuals,
    - Revitalising sense of community,
    - Providing economic development opportunities

  The case study of Blackpool did not find evidence to date to support the claim for any of these five areas of contribution through the deployment of a civic portal. VICNET case study (Schauder et. al., 2004) offers an Information Continuum Model (ICM) as a tool to assess the robustness of initiatives to support community needs in a sustainable manner.

- ***Question 6.*** What are the cultural and political issues involved in the process of community portal development?

- *Discussion Q6* - The sustainability of Community Technology will ultimately be determined by communities themselves. If a Community Technology initiative is to form an integral part of, and contribute to, the 'shared experiences' of community life (Day and Cupidi, 2004), then it must be the community itself that defines and manages the fitness or relevance of that initiative. Active participation of a local community, at every stage of a project's life cycle is essential if the community is to identify with, and develop a sense of ownership of an initiative. Active citizenship, human-centred design, and communal participation from the early planning stages are therefore prerequisites for sustainability and are issues that need academic consideration. Financial sustainability of community ICT initiatives needs policy-makers and funders to acknowledge their long-term responsibilities and involvement. The short-term 'project-based' approach often found in policy development and funding mechanisms is detrimental to the viability of community technology initiatives (Day and Harris, 1997, Shearman, 1999). The social contributions of many of these community technology portal initiatives has grown in significance as their activities have matured. However, such contributions have generally been confined to the micro-level. Until recently, the existence of community portal technology initiatives as a macro-level social phenomenon has been masked by the pervasive power of the techno-economic, and homogenising worldview of the Information Society promulgated by commercial and government/public sector bodies. This

top-down worldview is increasingly being exposed as an irrelevance to a culturally diverse global civil society (Schuler and Day, 2004) across which an alternative, bottom-up approach to communication technology at community level is emerging across the globe.

Government engagement with community is limited, and lack of intra-governmental collaboration is problematic, with lack of communication between government departments, e.g in the UK - Office of the Deputy Prime-Minister (responsible for Local Government), and Cabinet Office eGov Unit (responsible for DirectGov development). The local eGov portal has recently been created (October 2005), arising from the e-Gov@Local consultation paper (ODPM, 2004). This is perpetuating the distinctive difference between local and central government on-line portal offer. Organisation Science suggests that best practice is to consider the influence and impact of Technology (and its effects on People and Systems) over a period of time (Orlikowski, 2002). In reality no-one has the time to invest in this analysis and planning. It would be better if they did have!

- ***Findings Question 6.*** - Lack of dialogue and consultation between Central Government and Local Government is perceived as a problem issue that fails to connect the national developers with the citizens that the services are intended to serve. In the developer community a culture of extensive communication between the vision architects and operational implementers is required to bridge gaps in interpretation. (Jain 2004, Heeks 1999).

7.3 Summary and Synthesis of the Research Study

This research study recognised the existence of multiple research issues in the fields of information systems (informatics), information technology (telematics), and social science. The topic of community portals straddles these three areas, but in-depth study of these discrete disciplines is beyond the bounds of this dissertation. The multi-science discipline nature of this subject, and the wider context of *'people and technology'* means there is no 'one big theory' capable of drawing out the wider significance of community portal developments. Chapter 3 introduces the research frameworks in information systems (3.2 p119, 3.4 p129), and describes the research approach for this inquiry (3.10 p151).

Each of the three disciplines engaged in this research exercise are dynamically evolving, and during the total 5 year period of the research study the term community informatics (Gurstein, 1999) has emerged and become the generic subject area where community portals appropriately sits. Chapter 4 detailed the Research Methodology.

Community portals are an area in which practical activity and emerging technology will always outrun the capacity to interpret and explain their broader social significance, in particular because technologies themselves are being developed at an exponential rate. Rather than define the study of community portals as something that marks a complete break from previous modes of theorising the research draws from a range of existing theories and discourses within the humanities, social science and information systems

domain, in order to elucidate major points, while also drawing attention to the challenges that developments in community portal systems present to pre-existing paradigms.

Gurstein (1999, 2000, 2005) presents an optimistic view of community informatics, pointing to the *'firestorm of development' and implementation of ICTs'* (Gurstein, 2000, p20). De-Cindio (2000) in her consideration of community networking in Europe points to Schuler (1996), and Henderson, Kuhn, and Muller (1998) to emphasise the points that 'ICT must be designed not only *for* those who will ultimately use it, not only *with* them, but also *by* them.

The research findings question whether it is feasible for individual Local Authorities to develop complex and sophisticated systems. Little evidence was found in the 2002 Questionnaire Survey analysis and interviews to indicate high levels of community engagement, but some evidence was found in the latter stages of the Blackpool Case Study.

7.3.1 Summary of Use of Evaluation Frameworks for Interpretivist Research

Structuration Theory, described in Chapter 3 (section 3.4.3 p137-143) is frequently associated with the work of Anthony Giddens (1984, 1987), though other researchers have adapted it to study the use of Information and Communications Technology (ICT) (Orlikowski, 2000, Rose, 1999). Axiomatic to structuration theory is the principle that the 'structures' of everyday life, and

institutional life, are reproduced on a daily basis through the interaction of human agency, institutional rules, and the distribution of material resources. Social structure is therefore both in peoples heads, in the form of stable institutional rules, and 'out there' in the form of material resources (Stillman and Stoecker, 2004). On-going micro-level interactions, including use of power and resources result in what are called 'structural principles', which over time become the recognisable properties, or characteristics, of social systems such as community networks (Giddens, 1981, p170).

For community portal development research the creation of 'technologies in practice' is applied in the on-going process of creation and distribution of peoples understanding through interactions and use of artefacts. Community portals are one such example of artefacts that have the potential to extend the way in which people interact. However, technologies are not inert objects: actor-network theory provides the insight that technologies in fact appear to have their own agency with which humans interact (Latour, 1994). Stolterman (2002) gives an example of e-mail running a person's life, when in reality people have the capability to turn the machine off, rather than the other way round. In this example the material reality and the peoples definition of that reality differ from each other.

The application of structuration theory to community portal research is challenging. It generally focuses on the contrasting constructions of technology, but how could this apply to community portals? Stillman and Stoecker (2004) offer an approach picking up liminality as an important

concept within structuration theory applied to community networking. In this context liminal social spaces are where social structures and independent action collide, producing social innovations. Community networks (and hence community portals) focus that liminality – as they attempt interventions that require either public sphere resources or policy changes that are often at odds with existing social structures. Community portals are therefore more than a 'black box' for which levers are simply pulled and outputs occur by 'dumb terminal' human agents. Technology is equivocal and contingent, and its use is characterised by 'chronic surprise', for which constant adaptation and response is necessary (Weick, 1990). Community portals are a particular form of technology that are now a central tool of both civic and community networking. Evidence of the difficulties of a creating a sustainable business model for community portals point to the need for continued adaptation.

A criticism of structuration theory is that it is often little more than a heuristic device, providing some illumination of the interaction of structure and agency, but providing no lessons for how to build better social structures, or deploy more effective agency (Gregson, 1989). One reason for the criticism is that structuration theory has not linked to a method that can lead to practical results. In the case of community portal research the heuristic quality of structuration theory, which suggest broad categories rather than specific indicators of both structure and agency, has been useful in allowing room for agent participation in making the research process as practical and relevant as possible.

7.3.2 *Frameworks Used to Evaluate Interpretive Research in this Study*

To judge the research against accepted criteria, three relevant evaluation frameworks were chosen to undertake this analysis:

- Myers (1997)
- Klein and Myers (1999), and
- Pettigrew (1985)

Myers (1997) offers a number of criteria that can be applied to evaluate interpretive research. Klein and Myers (1999) have provided a more comprehensive schema, which encapsulates seven principles for evaluating interpretivist case study research. Pettigrew (1985) gives an evaluation framework regarding the criteria by which context-process analysis should be judged.

Analysis in this chapter uses these three frameworks to evaluate the findings from the Community Portal UK Research Survey 2002, and the Blackpool Case Study.

table 7.1 Myer's Criteria to Judge Interpretive Research

Does the research make a contribution to the field? Has the author developed any new concepts or theories?
Does the author offer rich insight into the human, social and organisational aspects of IT and their application?
Does the research contradict conventional wisdom and provide richer understanding?
Has a sufficient quantity of data been collected for insights to emerge?

Are multiple viewpoints and alternative perspectives represented?
Has sufficient information about the research method and process been presented?

(source: Myers, 1997)

In table 7.1 Myers (1997) presents a fundamental set of criteria for use in assessing this research evidence. From the research evidence derived from the portal survey in 2002, and the subsequent case study of Blackpool it is clear that a contribution to knowledge is made. Although it does not offer new theories the research contributes to an awareness of issues involved in the process of information systems development applied as community portals in the context of community networking. Whether the research provides 'rich insight' or not is subjective, however, the analysis of data collected provides rich insight into the complex technical, social and political issues that affect information systems development as community portals.

With regard to the interpretivist research paradigm discussed in Chapter 3 (3.13 p160), the research approach now takes the comprehensive schema provided by Klein and Myers (1999) to evaluate the outcome findings of the research exercise. The principles are shown in table 7.2 below.

Table 7.2 Summary of the Principles for Interpretive Research

1. The fundamental principle of the hermeneutic circle
2. The principle of contextualism
3. The principle of interaction between the researcher

and the subjects
4. The principle of abstraction and generalisation
5. The principle of dialogical reasoning
6. The principle of multiple interpretations
7. The principle of suspicion

(source: Klein and Myers, 1999)

The fundamental *first* principle of the hermeneutic circle is described by Klein and Myers (1999) as resting on the assumption that all human understanding is achieved by iterating between considering the interdependent meaning of the parts and the whole they form. They give the example of linguistic interpretation that is always context dependent. In this research inquiry, the interviews, documents, records and case study notes were ordered, explained and interpreted in a continuing attempt to make sense of the 'whole' by moving between description and understanding of the parts and of the whole. As more information was gathered, the overall understanding of the process increased. The hermeneutic process continued until the absurdities, contradiction and oppositions in the overall 'organisation' no longer seemed strange but made sense. An example of this concerned the complex set of events that led to contracting with Granada in 2003 for the procurement of the CommunityWise variant, and the eventual termination of the contract in 2005 when the product was not delivered. This contextualisation was only understood by iterating between the whole, and the respective parts of the process. This could not be achieved until visits, interviews, and meetings had taken place, and was not fully appreciated until further interview investigation of relationships and dependencies between respective departments was

conducted. Application of this hermeneutic principle was critical as a tool for successfully understanding the complex relationships in the Case Studies of Blackpool Case Study and its Customer First programme, where the emergent properties are greater than the sum of the individual project-based components, e.g. CommunityWise portal, Broadband Interactive Grid, Knowledge Base, etc.

These examples are also relevant to the *second* principle, that of contextualisation. The research was undertaken using a contextualist method and thus the importance of the impact of context on process was fundamental. This narrative links to the context-process framework diagram for the Blackpool case study, figure 6.1.

The *third* principle concerns the interaction between the researcher and the subject. Klein and Myers (1999) point out that in social research the 'data' are not seen to be sitting there like "rocks on the seashore waiting to be collected", but as facts that emerge as part of the social interaction between the researcher and the participants. By way of evidence for this, the case study evidence and reports from meeting attendances provided as complete a discussion as possible of the data collection techniques and also discussed the changing role of the researcher. The contextual relationship between collaborative participant organisations, departments, and their people changed over time as a trusted relationship developed, positively affecting their perception of the researcher (shifting from possible "spy in the camp" to objective observer). Relevant discussion concerned the motivating factors, for participants engaging in interviews over time. Read (1965) offers a less

"objective" approach providing a narrative "as it appears through my own eyes, filtered through my own background, my likes and dislikes qualified by my own strengths and weaknesses". This is another useful way of contextualising the outputs from the interactions between the researcher and those whose behaviours are being researched.

Klein and Myers *fourth* principle concerns abstraction and generalisation. Here the details revealed by the data interpretation were related to theoretical concepts that describe the nature of human understanding and social action. This played an important part in the analysis and generalisation of the research, by drawing specific implications and providing rich insight (Walsham, 1995). Use of social theory in this research has offered a vocabulary for discussing the details of the case study and has provided a "sensitising device" (Walsham, 1995) to view the world in a particular way. The complexity of relationships and actions meant it was initially difficult to interpret what was going on, but the output findings were extracted and illuminated by the hermeneutic circle process. This approach enabled more concrete and specific findings to be exposed.

Following on from abstraction, the *fifth* principle - that of dialogical reasoning - requires the researcher to challenge his or her pre-occupations and prejudices that guided the original research design. Applying this principle the research exercise confronted the superficial findings to probe the reality of the situations under consideration. By way of evidence for this principle, at the start of the research inquiry, initial consideration was preoccupied or

prejudiced with a belief that many of the portals developed were "bauble-like" and unsustainable – built on windfall opportunist capital project bids – and unable to meet the needs of the community users. The reality of the survey analysis to an extent confirmed this view, but also contradicted the belief by presenting a facet of portal development that reflected serious thought and strategic planning was taking place, with well considered linkage to beneficial services for the community concerned. The key gap that was revealed was lack of citizen engagement and without strong support from the community the portal serves a sustainable development becomes impossible.

A further challenge to the conventional view – exposed through dialogical reasoning - was that in the research period 2000-2005 local government portal developers were accepting the vendor software products, even though they were not a good fit to the needs and requirements of the developers, and hence the community they were intended to serve. Any software product is based on a conceptual model and in the case of CommunityWise (Blackpool) because this was derived from an educational Virtual Learning Environment product the mismatch became an insurmountable hurdle that led to the demise and failure of this project. From these examples it is concluded that dialogical reasoning can be a powerful tool to expose masked issues. Pursuing the above example leads to the recommendation that Local Authorities should not simply accept the vendor offer of bespoke software products that may effectively not be 'fit for purpose'. Dialogue with vendors should be used to turn around the process so that vendors produce new products that match the user market needs, rather than 'dumping' existing

(and often expensive) products from one marketplace in the hope that they may be suitable.

By using the multiple interpretations of Klein and Myers *sixth* principle, coupled with sensitivity to possible different interpretations among the participants as they are typically expressed, it was possible to obtain a clearer picture of a complex scenario. The way this is achieved, according to Klein and Myers (1999), is by multiple narratives or stories of the same sequence of events under study that are in some ways similar to multiple witness accounts. Use of context-process analysis to give a framework for Case Studies identifying different actor levels:

- External Bodies
- Political Drivers
- Architects
- System Developers
- Users

gave a start point for collecting different perspectives and viewpoints.

By way of evidence for this principle, multiple viewpoints emerge from interview transcripts. An example of how multiple viewpoints are expressed is shown in the mini-case study of EastServe in Manchester, in particular the viewpoint of residents. This was differently perceived as:

- "moving to services to meet the needs of the citizens" (EastServe resident and community champion);
- "tightening control over content structure and service delivery" (EastServe Portal developer);

- "an interesting sociological experiment" (MD Clicks & Links, Manchester), or
- "an intrusive authoritarian attempt to try to control the lives of ordinary residents" (second EastServe resident).

The final *seventh* principle is the principle of suspicion that requires sensitivity to possible biases and distortions in the narratives collected from participants. From this seventh principle the context of suspicion was present in establishing the credibility of undertaking academic research in a Local Government environment in a way that was not be seen as threatening to either the individual or the council. Early suspicion was allayed through dialogue and reassurances about the purpose of the work being undertaken. The extended nature of more than 2 years for the Blackpool Case Study meant that repeated contact through attendance as an observer at meetings and iterative dialogue progressively built a trusted relationship between the observer and the observed. This was critically important in being able to 'get behind the front' and elicit meaningful responses, rather than stonewall reaction. Development of a 'trusted' relationship enabled the exposure of issues such as the lack of dialogue between central and local government portal developers. Conversely, not taking statements at face value was assisted by the multiple viewpoints in probing the reality of complex issues and contrary views.

The third framework for evaluation is derived from Pettigrew (1985) who discusses the criteria by which contextualist research ought to be judged. These are shown in table 7.3.

Table 7.3 Criteria for judging Contextualist research

- Realism of context
- Theoretical and conceptual development
- Empirical and theoretical justification for both the chosen time frame of the study and vertical component
- Contribution to particular and general questions of policy and practice
- Reveal phenomena at the 'what', 'why' and 'how' levels
- Theoretical ideas and concepts are connected back to the data

(source: Pettigrew, 1985)

With regard to realism of context, the context was expressed as fully as possible in terms of the societal and organisational backdrop to the local authorities involved, in particular in justifying the case study of Blackpool as a valid exercise.

At the outset it was anticipated that the research exercise would be a predominantly technology endeavour; however it rapidly became the case that a narrow technological view would not give a full understanding of community portals. It was thus necessary to widen the scope to identify and investigate the social (people) elements of this topic.

Theoretical and conceptual development was derived from a literature search and combinations of theories from sociology and organisation theory. The conceptual development of themes was guided by reflection on the framework and the key themes formed the basis of the analytical narrative.

In keeping with Pettigrew (1985) the Blackpool case study attained some balance between description and analysis. The role of description is to clarify and establish the context, structure and process to be explained. The event was described in its context.

Pettigrew (1985) states:

> "There must be an empirical and theoretical justification for both the chosen time frame of the study and the vertical component, the decisions made to restrict the levels of analysis to the group, the organisation or the social, economic and political context through which the process makes its way".
>
> (Pettigrew, 1985)

The chosen time-frame of 2 years for the Blackpool Case Study (2002-2004) was a pragmatic decision to ensure that something useful and interesting was likely to happen and not to dissuade the Council from providing access by suggesting a period in excess of 2 years. It was the case however that the case study had been tracked from its inception two years earlier (2000-2002).

Planned interviews and regular attendance at meetings allowed relationships and issues to evolve and participants would sometimes have stored issues in their minds in readiness for discussion. The levels of analysis were chosen

because they represented the key levels that influenced the process of software development. The analysis did focus on the Blackpool Borough Council e-Systems project group, (and Blackpool eCommunity Forum), as time went on mainly because that was where most of the interesting issues were emerging and due to pragmatic considerations of continued collecting and transcribing data from interviewees at multiple levels.

Pettigrew (1985) also states:

> "the descriptive chronology should be interpreted by theoretical themes being used to derive theoretical ideas and concepts".
>
> (Pettigrew, 1985)

The theoretical framework developed in Chapter 3 was constantly in the mind of the researcher and after interviews was used to interpret events. At times the description would blend in to the analysis and this was to some extent desirable so as not to take a mechanistic approach.

Pettigrew (1990) argues that process analysis should reveal phenomena at the 'what', 'why' and 'how' levels. In the analysis of the case study, particular occurrences are as far as possible revealed at these levels. 'What' constitutes the description of the event, i.e. what actually happened. The 'how' consists of mechanisms and events by which actors goals were achieved with theoretical insights. The 'why' analysis is the attempt to provide theoretical insights into causal factors, explanations, etc. These factors are present in the discussion, for example, over the failure of private sector 'telco'

suppliers to provide broadband infrastructure in Blackpool as a lever to get public sector funding to remedy the problem.

The final point made by Pettigrew concerns how adequately the theoretical ideas and concepts are connected back to the data. The connection of the data back to the framework has been iterative to link theoretical positions, and to give realistic description of actual events. In this context the framework enabled the what, why, and how community portals were deployed, and the Community Portal 2002 Survey data revealed the limited extent of interactive 'transactional' services that exist, i.e. 2% only (Question B14 UK Survey 2002). Further analysis in this way confirmed the lack of 'portal' characteristics when compared with enterprise portals in the commercial sector, and the strong presence of 'Content Plus' (SOCITM, 2003) attributes.

From social shaping theories this research study identifies and highlights a paradox where the theoretical ambitions are stifled by the organisational reality to be found in the UK Government approach to portal development and deployment. Paradoxically, Local Government in the UK is positioned to be able to leverage citizen engagement with portal systems, but lacks the physical and people resources (skills and knowledge) to be able to gain full advantage of portal technology; whereas UK Central Government has the people expertise (Knowledge and skills), but lacks the close people engagement to understand citizen needs at the local implementation level. Research findings from the case studies reveal little impact of social shaping.

At the opposite end of this global spectrum, Salvador & Sherry (2004) in his essay on *'Local Learnings'* explores essential issues of deriving benefit from community networking / community portals in localities that have limited access to scarce ICT resources. De-Cindio's (2001) argument for close engagement of community members is relevant. Salvador and Sherry's (2004) point is that it is necessary to:

> "attempt to enliven the 'lived experience' in such a way that it can be 'felt' by engineers who are inventing and designing technology solutions".
>
> (Salvador & Sherry, 2004)

Telematic portals in this context are seen as a way of enhancing local communication and access to services, as illustrated by the case study of Blackpool, and mini-case studies of CCIS (Edinburgh), MCIN (Manchester), BlackburnWorld, EastServe (Manchester), Alston Cybermoor (Cumbria), and the national government portal Directgov. Research survey findings in 2002 reveal a gap between the citizen needs and the developers understanding of those needs. This was evident in each of the civic portal case studies undertaken (see Appendix 4). Further evidence from interviews in Central and Local Government Offices confirms a similar gap in understanding between Local Government (and Citizen needs), and Central Government developer understanding.

Local telematic activity can be inspired by interventionist strategies, as in the case of Blackpool local authority and its community groups, and business users. However, it is very much the local factors of culture, economy, politics

and society that will internalise the projects and policies and their effectiveness.

Case Study evidence from research in Blackpool has shown that there is inertia from outside local government, in businesses and community groups, to accepting the opportunities that these technologies may bring, in particular because broadband access is not yet ubiquitously available either in businesses or in the home.

Whilst it may be expected that it is the above factors that are driving the policy in a democracy, the case study evidence indicates that most policies and initiatives have been influenced by officers within local authorities, personal networks, entrepreneurial individuals and by the potential funding opportunities made available by Europe and the national government. This is particularly the case in Blackpool where the Head of eSystems, as the architect of the development, is a key driver and activist. The impact of people and 'champions' cannot be stressed enough as it is a major influencing factor on successful development. Linking this back to the theoretical evaluation framework (Pettigrew – table 7.3 - p276) the contextualist approach of studying the vertical component of, in this case five user contexts (figure 6.1 – page 246) reveals the critical importance of the middle tier 'architect' in giving vision and drive to the process. This theoretical approach is confirmed by Myers 'multiple viewpoints and alternative perspectives' (table 7.1 – page 268) approach, and the Klein and Myers (table 7.2 – page 270) multiple interpretations. As Gurstein (2004) noted Citizen Engagement is essential.

This research thesis supports the Gurstein statement. Coupling this to the simple research finding of getting the right people to do the right job gives the contextual linking of the 'users' to the 'architects', with the prospect of emergent outcomes through dialogue to provide interactive on-line services and applications that are valued by the citizens they are intended to serve.

It may be possible that telematic systems and community informatic systems are the tools to reshape the role of the social enterprise within the capitalist process and transcend the current crisis of accumulation, but it is doubtful that locally led disparate initiatives will support this. Citizen engagement and recruitment of community champions is needed to address this issue (Gurstein, 2005). Opportunities then need to be created to systematically link the community champions (representing the User viewpoint) to the portal developers.

The ad hoc nature of policies and initiatives has been identified in case studies (chapter 6) as very much local, and not recognising the inter-connectedness that telematics can bring about. This would seem very much to ignore any collaborative or collective social agenda. It may be that any collaborative resolve through the use of the new technologies will lead to emergent properties and advantage through economies of scale, but this is not proved through any survey findings. As the research shows the local activities utilising similar technologies have achieved differing degrees of success and spawned different projects using the technologies.

The generic 'shape' of the technologies does not change, but the 'specific' application to which they are put can give different outcomes. At the current time (2005), the evidence collected through this research finds it difficult to see how local authorities have successfully supported 'local shaping' of telematics to meet 'local needs', nor to see how local use of telematics has 'shaped' local IEG policy. Using Gurstein (2004) again there is a need to recognise that real change is essentially inclusive and development will not occur until local needs are met. The community portal agenda is not about innovation in itself, but is about the spread and diffusion of innovation (Rogers, 1995). Case study evidence (Chapter 7) finds the adoption and adaption of innovative portal technology to be impeded by the 'not invented here – don't want it' views of actors at both local and central government level in the UK.

This is arguing for a more proactive research agenda, to be mediated at the local level by local authorities, in an attempt to understand and value the role that telematics may have in supporting local community development and regeneration initiatives. In turn this could be used to broker developments with, and through, the private sector. This may help pre-empt any local expression of technological determinism through market led roll-outs of telematics that may be leading local economic development down inappropriate highways, byways or superhighways.

The literature review and secondary research considered the wider economic processes and policies at different spatial scales that have supported local

authority telematic developments. This research has identified that telematics can be passive and that local authorities can be more intent on manipulating their own institutional resources around specific activities that, whilst claimed as collaborative partnership, were not clearly identified as true partnerships.

The Blackpool Case Study (and mini-case studies) found local policies and initiatives emanating from local authority officers and/or their personal networks. Often the politics of the authority had been circumnavigated or circumvented. From the research evidence provided in Chapter Five and Six, it became obvious that local authorities have in some way attempted to push the value of telematic portals as local economic development tools, albeit with varying degrees of limited success.

Analysis of data from the 2002 Survey question B5 (Objectives and Development – see Annex 1) responses, and subsequent interview probes identified short term funding and the inconsistency of financial and human resources made planning difficult, yet in attempting to address portal development a longer-term strategy and on-going resources are essential. None of the local authorities in the Community Portal UK Survey (2002) (and subsequent interviews) had identifiable inclusion of the local community or business users of ICTs into the policy making process, again identifying a weakness in the coalition attempting to address the perceived needs.

For a local authority such as Blackpool a crucial task is ensuring that adequate linkage and access to the ICT network exists. However, the

problem of linkage was compounded by the free-market ethos introduced by telecommunications liberalisation. The Blackpool Case Study (Chapter 6) found that Telewest was unable to invest in 'speculative dig' to provide fibre optic broadband telecom services in certain geographic areas of the town. The authorities in Blackpool attempted to address this through intervention with a local authority led initiative to support the development of infrastructure. (examples of the city of Stockholm) were given to inform this argument). This intervention was successful in the context of education sector connectivity across Blackpool, but unsuccessful for ubiquitous broadband access from homes or commercial premises. This emerged from the education sector, providing broadband connectivity to schools. The infrastructure is now capable of supporting wider participation with connectivity to other community groupings.

7.4 Application of Research Methods

This section discusses the usage and application of actor-network theory and context-process analysis in the research undertaken.

7.4.1 Use of Actor-Network theory

Actor-Network theory has been used to understand some of the behaviours found through the Community Portal UK Survey (2002), and the Case Study of Blackpool. Actor network theory (Latour, 1996) usefully considers technology as a "non-human" stakeholder that often contains assumptions or inscribed interests of the developers that could be to the detriment or benefit of parties in a power play. In the case study of Blackpool the use of technology is seen as potentially strengthening the political capability by using

"push" technology to enhance the ability to assert political influence on citizens. This is a current political issue in Blackpool in 2005 with dialogue between elected members and Council Officers to define acceptable use of technology for information 'push' to citizens.

In the writings of Bruno Latour, particularly in his book Pandora's Hope (Latour, 1999), he argues for the idea that neither technology nor the social environment alone are sole determining factors. Latour argues that there is no 'divide' between them, observing that the idea of a divide is a modern attempt to rationalise our world. Latour's perspective draws attention to the real world – to the reality where people live and in which technology is part of an everyday network of social and technological actors. This implies that it is not possible to analyse the impact of technology by studying the use of technology as a distinct entity in itself. Conversely, it is not possible to understand technological development solely by analysing the social sphere. This double aspect is picked up by Mumford (1983, 1985, 1997, 2003) in linking *People* and *Technology* to gain insight through the socio-technological observations of a situation.

At the outset in 1999 this research exercise was perceived as a technical endeavour, but it was necessary to review this position and adopt a People and Technology inquiry. Analysis in this research exercise has followed the *people* and *technology* themes by starting at the 'middle' and moving towards the people and technology ends. This raised the question: what is the middle when it comes to information systems? Accepting that there are no fixed ends

the enquiry sought a middle start-point from which to develop an understanding in an outward direction. In studying the *technology* it was necessary to study both it and the *people* who deal with it simultaneously. Adopting this approach enabled an understanding of the functionality of the designed *technology* and the needs of the *people* for whom the technology was being designed. A significant finding revealed through this approach was the gap between the *designer* view and the citizens' *user* requirements that portal technology was intended to satisfy. (see figure 6.1 page 239)

7.4.2 Use of Context Process analysis. A review of its application and problems identified.

The principles of context-process analysis are introduced and explained in Chapter 3 (section 3.13). This theoretical approach has been applied within this research, in particular in the case study of Blackpool described in Chapter 6.

A problem in the use of context-process analysis is related to coping with interviewing at the varying levels of analysis and the resultant volume of information. Breaking the process into multiple levels of analysis over time was useful and helped to focus on the multiple interpretations and influencing factors involved in the process of community portal development. For instance, the importance of the links with Telewest was deemed important at the outset, but this diminished over time and collaboration with Granada became fundamental to the Blackpool development. At the level of the

CommunityWise project, it proved useful to examine the various actors and relationships as the project level of analysis is split between various social groups located in geographically dispersed and politically separated units. Analysing these various relationships at the project level of analysis opened up issues that proved useful for political and cultural analysis. These are addressed later in this chapter (see sections 7.5.3 + 7.5.4).

The methodology (context-process analysis) has distinct similarities with interpretivist case study methodology and thus suffers from a number of similar criticisms such as problems with generalisation, lack of rigour, problems of data reliability and validation, access, and continuity. However, the research design treats these limitations in the following way. Multiple primary and secondary sources have been collected, and separate interviewees questioned on the same themes to provide richness of interpretations. Interviews were tape recorded and transcribed in full, and a database of notes, transcripts and comments maintained as a permanent record.

As well as the problems of information overload, problems of time were considerable. Meetings were often convened by the CommunityWise partners at relatively short notice and it took strenuous effort to ensure sustained participation whilst holding down a full time job. Taped interview took a substantial time to be transcribed and then would have to be read and re-read at intervals to think through any nuances of comments and responses made

by interviewees. All these factors meant that the research was very time consuming indeed.

With regard to the theoretical completeness of the approach, a strength of context-process analysis is its holistic emphasis, allowing the researcher to be sensitive to a range of issues. However, Pettigrew does not suggest a coherent analysis strategy and this research followed the analysis strategy suggested by Walsham (1995). Analysis of data from context-process analysis is left to contingency. The analysis strategy suggested by Walsham could be criticised as being vague as he suggests "intensive discussion and reflection on the field data" to draw out themes. As a lone researcher it was sometimes difficult to find an informed colleague prepared to spend time discussing the interviews, compounding the fact that all the interviews were undertaken alone. Opportunities to discuss findings with colleagues were limited due to the specialist nature of the research. The author must have bored many a colleague to tears when attempting to formulate themes in the way suggested by Walsham! It is felt that Walsham's approach is well suited to research partnerships, but the creative process of the generation of themes requires discussion and debate that cannot be done alone.

Regarding choice of theoretical framework, it was felt that Pettigrew's assertion that one should go into a situation with a range of theoretical models and theories to refer to is highly desirable but unrealistic for a lone, novice researcher. Realistically, a novice can only fully understand a small range of theories feeling confident to use them successfully. The implication of this is

that exploratory work using context-process analysis is better suited to multi-disciplinary teams. In a situation with a lone novice, the lack of detailed knowledge and understanding of multiple theories to draw on; nor the presence of a multi-disciplinary team for mutual support, means that there is a danger that only issues which fit the theories would be uncovered – if one only has a hammer, every problem is a nail!

Triangulation of the research proved to be useful in using a variety of data sources. However, the idea of "verification" of research results in interpretivist case study work is challenged (Walsham, 1995) as it assumes the application of scientific methods. It is more appropriate to describe the richness of different interpretations of events that are key to achieving insights and reinforcing themes, or adding new perspectives. It is argued that interpretive research is not only useful at the exploratory stage (Walsham, 1995) but can be used for generalising results.

Interviews in the follow-up mini-case studies were semi-structured - in the beginning exploratory and open-ended, but as time went on progressively focused. An ever-present problem with some interviewees was controlling digression as opposed to investigating a potentially interesting avenue of investigation. Toward the end of the investigation, e-mails were sent to interviewees outlining the broad issues that would be helpful to discuss in the available time. Interviews at different hierarchical levels brought out different viewpoints and perspectives, but they in particular tended to be more conservative in what they said as they were unsure of the status and

independence of the researcher. The relative openness of lower level individuals is probably a reflection of less responsibility and the reduced consequences of any repercussions. However, on the whole access was good and respondents were very open with their answers to questions, even when tape-recorded.

The position and role of the researcher was sometimes problematic, due to both the 'outsider' nature of the researcher and the 'outside the norm' academic inquiry into the portal development process in the case study. The Council and Granada entered into a commercial relationship that was sensitive and tied to outputs. There was a need to establish the researcher's credibility to give the interviewees reason to continue to participate in the study. One problem concerned ascertaining what information was confidential or sensitive to either side so as not to damage relations between the two collaborating organisations. The implication of the involvement of the researcher in potentially altering the course of events is also of significance. This reflects the position of the researcher as being of the 'impartial observer'.

As such the role of the researcher in the investigation is not and never can be totally objective. By way of commentary on interpretivist research, Jayaratna (1994) discusses at length the importance of the mental construct in interpreting events. Indeed, if viewed through a different 'lens', or a different mental and theoretical construct the results of this study could have shown a very different picture. Interpretivist research by definition contains the interpretations of the multiple viewpoints and presents a particular set of views

and realities. Thus it relates 'stories' told through mental and theoretical 'lenses' as a result of rigorous and systematic inquiry. Recognising Jayaratna's key points of importance of mental construct to gain multiple perspectives to avoid misinterpretation, the Klein and Myers framework (table 7.2 – p.270), with the principle of multiple perspectives, gave a broad canvas approach to enable objectivity.

7.5 Evaluation, contexualisation, and findings of the Blackpool case study

Linking ***blackpool4me.com*** development into the wider context of the Broadband Interactive Grid (BIG), involves community engagement through consultation and reveals a difficulty experienced during this development. The crux of the problem for the 'Broadband Interactive Grid' in Blackpool, and perhaps others, is that the very citizens that needed to be included in the process were not familiar enough with the technology (the web) and community networking to offer useful opinions and insights. This lack of familiarity usually prevents coherent questions and critiques from citizens. Major concerns include:

- finding ways to include citizens in the process, through consultation, and
- finding ways to introduce citizens to the technology.

The central issue was:

- What techniques are available to involve citizens in the design process for an information service (a community portal) with which few community members are familiar?

Development of BIG focused on the council housing stock that amounts to some 3,000 properties/dwellings and this was a start point for consideration. Despite innovative ideas for wireless connectivity as a 'digital city' project, early indications confirmed that rapid development of broadband access (circa 2002-2003) was unlikely to succeed without private sector involvement. The Blackpool e-Systems focus shifted at the beginning of 2003 to develop the portal within a Customer First business process change development, and this has been implemented as a disruptive technology application to change the method of citizen service delivery.

7.5.1 Cultural Landscape - 2002-2004

Prior to the case study period (2002-2004) the concept of the Broadband Interactive Grid had emerged and its origins traced back to early Blackpool thinking on eSystems and service development. The period 2000-2002 is significant in the lack of Central/ Local Government dialogue regarding on-line systems development. Influencing factors are presented in the wider contextualisation Table 7.4 from 2000-2004.

The pre-Case Study period 2000-2002, when the foundations were being formulated exposed cross-cultural influencing factors that are outlined below.

Table 7.4 Cultural Contextualisation 2000-2004

Context	Socio Structural	Cross Cultural issues	Symbolic factors	Sub-cultural issues
Blackpool: a town in need of regeneration due to change in patterns of tourism	Local government culture. The key driver of change is Philip Baron – eServices Director	101 reasons and rules why things could not be done	Capability contrast between local and central government	Legacy attitudes from past decades
UK: eGov policy for change in citizen access to government departments	Central government culture of development in isolation from local / regional input	No direct communication with local government departments	Polarisation	Not in the culture to systematically discuss between local/central departments
Capita/Granada Learning:	aggressive entrepreneurial at strategic level	Differing attitudes to deadlines / timescales	Not a greenfield site	Low priority of CommunityWise

7.5.2 Cultural Context of Development in Blackpool

The environment in which the Broadband Interactive Grid was formulated is firmly a local – Blackpool development, isolated from its neighbours of Lancashire, or the flanking local authorities of Fylde, or Wyre Boroughs. The Unitary Authority status of Blackpool gives differentiation, and in some ways this gives a freedom, scope, and manageable size to the development within the Blackpool geographical boundary. Blackpool is considered to be a town in decline, with insufficient investment and infrastructure. The need for regeneration is undeniable and from the outset the Broadband Interactive Grid development was firmly linked to regeneration issues.

Local identity and pride in the town however still gives a superior feeling and attitude to its neighbours (Fylde, Wyre, and Lancashire) to an extent that reinforces the go-it-alone approach to the Interactive Grid development.

At this stage it is important to recognise that people and personalities are of key importance to this development. The character of Philip Baron, and his personality, is important as a key actor and influencing leader. Throughout this development Philip Baron has been the principal architect of the 'BIG' concept, and the Customer First initiative. Leadership style and the behaviours to give effective leadership are significant and endorse the importance of getting the right skills in place at the right time to get the job done.

At the inception of 'BIG', the potential was largely unknown both within the community, and within the council. It was at this stage that there were conflicts between the sub-cultures of the respective existing IT departments that were converged and eventually brought together as the new e-Services unit. The existence of these sub-groups, in particular the Data-base administrators who felt themselves to be influential, was a major challenge at the outset. Baron was keen to "weld together" a coherent organisation:

> "Let me tell you about an interesting sociological experiment..... I ended up with a mix of people, a bunch of database people, a bunch of support technicians, and a small group of web developers. So I ended up with three different sets of people from what seemed slightly different IT backgrounds, but they all had completely different approaches and different views of life.
>
> Previously they had been dispersed in different buildings and offices and now they were being brought together as a new team.
>
> The web developers came from a very informal culture that clashed with the ex-council database programmers.
>
> Having said that in all three sections there was a certain arrogance about the way you design systems and basically it was totally informal, there was no

acknowledgement that project management, systems development methodology and standards were a good thing, and so on"

(Philip Baron, Blackpool Borough Council in 2003)

It was recognised that if the 'BIG' development was to be successful and influential in facilitating change, and improvements then there was a need to create a corporate ethos to ensure the long term survival of the project and the e-Services developers.

Having formed a team further issues arose when - to enable the Customer First changes, physical displacement of people (staff) took place during a 'Customer First' re-organisation of the Town Hall services. Resistance to change was significant. People (including Department Heads who had 'signed-up' to the principle of Customer First) openly revolted at the practice, in particular when physical movement of offices to locations away from the town hall base took place.

The change programme continued and after the initial upset a new harmonisation became evident, and improved linkages detectable, due to physical proximity of previously isolated teams.

7.5.3 Cultural contextualisation - period 2000 – 2002 'inception of Broadband Interactive Grid (BIG) and Customer First'

At the inception of the Broadband Interactive Grid strategy the original focus was a Blackpool oriented development. This was seen as a manageable size

due to the Unitary nature of the local authority and the bounded separation from the larger Lancashire County Council, or the smaller flanking borough councils of Wyre Borough to the north and east, and Fylde Borough.

The requirement to respond to the government's eGov agenda with an Implementing Electronic Government (IEG) statement produced a strategic shift in thinking. The original title of the Blackpool Interactive Grid (BIG) project was re-badged as the Broadband Interactive Grid replacing the politically sensitive 'Blackpool' word with the more neutral 'Broadband' word. This was seen as an enabling factor to permit dialogue with the flanking borough councils to broaden the geographic spread of potential development and allow the formation of a larger bidding group for project funding opportunities. The cultural differences of the smaller local authorities were seen as manageable, compared with the prospect – and reticence - to enter into dialogue with the much larger Lancashire County Council, which was seen as an unmanageable scale of start-up project.

Concurrently, the cultural differences between local developers and central government developers were perceived as an unbridgeable chasm and although officers were highly aware of funding streams from central government departments such as the Office of the Deputy Prime-minister (ODPM), e-Envoy, etc., little attempt was made to engage with central government officers to seek strategic or operational dialogue for the development proposed, and engage support and assistance from Central Government departments.

The issue of differing cultures and "power distance" relations is addressed by Hofstede (1991) who places significance on this effect. This work indicates that cultural determinism is an influencing factor in the apparent cultural divides between central and local government officers.

A statement shows the impact of this on staff in local government from a very experienced local government officer based in Blackpool.

> "Central government officers have no idea of our problems and care even less for hearing about them. They just want things done exactly the way they would do them."
>
> (Project Officer C - Blackpool Borough Council e-Services – in 2003)

This facet of the consciousness of a central / local divide is reinforced by the perception in a Central Government IT department.

> "eGov is driven from this end (Central). Those guys in local government just have a silo mentality about the way things need to develop. We tried once to include them in a seminar but it didn't work so we just get on with it."
>
> (Project Manager Gibbon House of Lords IT Office – in 2003)

A feasibility study for the Broadband Interactive Grid commenced in 2001 and this included commercial partners (Telewest). Links were forged with strategists in Telewest rather than sales staff with a strictly commercial interest and good working relationships developed. Although there was goodwill and dialogue at the regional level, the proposals foundered through Telewest's inability to undertake speculative development. A rock-solid business case would be needed for any development activity. The regional Telewest staff blamed the stifling of proposals on Telewest's hard-nosed

'central' finance directors. Again this points to similar distance between, in this case, regional and central 'head-office' staff.

During this period the officers from Blackpool commenced a dialogue with private sector VLE vendor Granada. This led to the concept of CommunityWise development. Arising from eCommunity activities in Blackpool the concept of ***blackpool4me.com*** became the citizen portal for the town.

The feasibility exercise also identified needs for a systems integrator and this lead towards a successful bid for funding to purchase the Lagan Frontline Citizen Relationship Management (CRM) product. The initial intention was to interface a portal based on Granada's CommunityWise software interfaced in combination with the Frontline (Lagan) CRM integration product as an overall portal service that approached the capability of private sector enterprise information portal products.

Engagement with the Office of the Deputy Prime-Minister (ODPM) in 2002 gave new funding to support these developments, over and above the income to local authorities from the Implementing e-Government (IEG) initiative.

A significant feature in driving the Customer First project that arose as a Business Process Change programme was identification of an elected representative (i.e. a Senior Councillor) as a local eEnvoy, to engender high level support, and similarly create focus group meetings with citizen groups, engaging with people that would become the users of the portal services.

This deliberate involvement of citizen users raised the profile as citizens themselves produced local pressure on their elected representatives to support this e-Development of interactive service channels.

7.5.4 Cultural contextualisation - period 2002 – 2004 'blackpool4me.com' development

In this formative period, a partnership between Blackpool Borough Council and Blackpool and The Fylde College (based on an earlier 'concord' agreement) led to implementation of resource sharing in a Virtual Learning Environment (VLE). Blackpool Borough Council (BBC) had already invested in Granada Learnwise, and when Blackpool and The Fylde College was shortlisting VLE vendors there was logic in the argument that school pupils should experience a similar learning environment when they progress to College. Discussion followed and the College shared LearnWise access with BBC on a hardware platform owned and operated by BBC. The corollary to this is that BBC shared access to the Fretwell Downing Educational Business System hosted on hardware at Blackpool and The Fylde College, to facilitate Learner Information statistical returns to the Funding bodies such as Learning & Skills Council (LSC).

Development of Granada CommunityWise initially flourished and partner relationships were very positive. At the outset participants were stating:

> "The differences in culture and the mode of everyday conversation is really different. When we suggest something they listen and take note of what we say".

(Project Manager RB Blackpool Borough Council – in 2003)

Over time this changed and frustrating delays by Granada resulted in an attitude shift. The relationship was seen to deteriorate over the period of approximately a year to the point where a crisis review was necessary. The Council persevered with Granada, but concerns grew that the product outcome may not become a market 'winner'. Delays in developing the product, coupled with difficulties of non-working functions hampered progress to the extent that at the end of January 2005 a critical point was reached when the contract date for Granada to deliver a CommunityWise portal product was not met. The partnership has effectively ceased, with Blackpool Borough Council demanding their money back from Granada. The council received a full refund of their investment, and despite this major setback the development of ***blackpool4me.com*** continued in-house using the alternative technology of Microsoft Content Management Software.

Much has been written about the limitations of community networks, but little has been written about integrated service delivery. The recent trend is towards Citizen Relationship Management (Mechling, 2002). Citizen Relationship Management (CRM) conceives of government as a single entity, rather than a series of departments, creating for the citizen a single and highly integrated experience with government. Mechling (2002) captures citizen 'self-service' as a primary benefit for community portals, and states his research finds "none of these technology innovations have either promised or achieved radical cost cutting - apart from possibly a reduced demand on

service employees". The interview evidence in the Blackpool Case Study reinforces this. A clear goal of the government service efficiency agenda is self-service; not only for pulling down information via portal attached kiosks, etc., but also for on-line interactions with back-end databases for reporting faults to Highways and Housing departments, etc. However, the technical challenges are considerable and a systems integrator is required to achieve such ambitions.

Research evidence showed that a gap exists between most community portals currently in existence in not providing an interface to back-office database systems to enable interactivity and transactional channels for citizen services. Observation of the Blackpool development plans for portal deployment identified the same detectable condition due to absence of functionality to enable interfacing to existing database systems.

7.5.5 Findings from the Blackpool Case Study

Research into use of community portals in delivery of citizen services offers a new insight on development of user applications that will be valued by people. The research sought to contradict the conventional wisdom on technical / rational views of information systems development. A view that often prevails (Somerville, 2004) is that the process of software development is a rationalistic engineering exercise and that social and political considerations are unimportant. However, all software is built on a conceptual model and it is argued that it is vitally important to undertake analysis to understand the

needs and get the conceptual schema correct. In this case study of blackpool4me.com using CommunityWise software the finding was that software development based on an existing Virtual Learning Environment, (designed to meet the needs of the Education sector), the conceptual model was not an ideal fit for the community portal. Problems existed in Blackpool with CommunityWise because insufficient needs analysis took place. The research also challenged conventional wisdom regarding the traditional view of a uni-directional effect of service providers and service recipients, in that interactive portal services are bi-directional transaction channels, facilitated by portal delivery.

The findings point to the people and technology issues (Mumford, 1983, 1997, 2003) in Chapter 2, and a requirement not only for political attitudes and procurement behaviour to change, but also for private sector recognition that 'dumping' product into public sector is not appropriate. The key point is that the council needs to challenge the software developer on the appropriateness of the conceptual model that the software application is based upon, but this necessitates knowledge and skills to robustly challenge the 'seductive' sales talk.

These factors are significant as examples of rich insight justifying the single case study design – in this case based on Blackpool. The context and relationships of the Blackpool Case Study, expressed over the period from 2001 – 2004 (3 years) is visualised in figure 6.1 (p.245). Initial obstacles included lack of finances, absence of skill and knowledge within the local

authority, and the failure to generate effective partnerships with the private sector to secure long-term development opportunities.

Table 7.5 draws out the major themes of the study as key points worthy of reflection. Firstly, the historical reconstruction of events prior to 2002 witnessed the early attempts to create a broadband infrastructure in Blackpool, following the feasibility study for the Blackpool Interactive Grid development. This was the period when Philip Baron (as eSystem Director in Blackpool) was creating the organisational structure of the embryonic e-Systems department in Blackpool Borough Council. This was also the period when the council was encouraging Telewest to install a broadband network pervasively throughout Blackpool, including all the 3,000 Blackpool Council housing stock. Analysis shows that these activities pre-date the Implementing e-Government (IEG) initiatives, and were instrumental in achieving Blackpool's strategic management eSystems objectives. Later analysis showed how the Council's systems teams attempt to exploit the IEG opportunity. It was shown that the processes were not completely independent of other similar activities in adjacent local authorities, (Fylde and Wyre Boroughs). e -Gov development has offered economic benefits and pump-priming funding to Blackpool Borough Council, (in the same way that all UK authorities have received similar Implementing Electronic Government funding).

The attributes of the analysis are characterised by use of technology for citizen collaboration. Community portal development in Blackpool was initially

only deploying web-site technology for placing paper brochure style content on the internet. The advent of economic and sophisticated software packages to support portal development, including system integration through a Citizen Relationship Management (CRM) software application package became transformative, giving front-office presentation to citizen users' and back-office integration into council databases.

Table 7.5 Summary of the Research Survey Themes and Case Study Analysis.

		National Research Survey	Local Case Study Blackpool
Cultural analysis	2000-02	• Low levels of broadband connectivity • Only 2% of web-sites interactive • Few possess Portal functionality	• Low levels of broadband access • Web page development within existing resources
	2002-04	• 5% interactive sites • Portals embedded within management strategy	• Bidding culture achieves success leading to new resources (incl staff) to develop web services • Customer First programme established for Business Process Change programme
Political analysis	2000-02	• EGov pump priming • Lack of join-up in Office of eGov and ODPM	• Absence of strong lead on strategy from Chief Exec'
	2002-04	• EGov (IEG) expect Efficiency gains	• High level (Chief Exec) support for Customer First
Community Engagement	2000-02	• UK Online national portal	• Awareness raising
	2002-04	• UK Online re-designed as DirectGov with Intermediaries • Office of Deputy Prime-Minister (ODPM) dialogue with Office of eGov.	• Neighbourhood Forums • CommunityWise training • Need for pervasive broadband infrastructure • Customer First physical changes implemented with eService channels for Citizens.

The relationship (or lack of relationship) between central/regional government and local government contradicts the traditional view of "one way effect" – analogous to globalisation transfer of knowledge and skills from developed to developing countries. In this context it is interesting to note the central government view of itself (Interview with Paul Gibbons - House of Lords IT project officer section 7.5.3 p.303) being relatively developed and local government relatively un-developed. Dimensions of cultural difference between central and local government were exposed in order to understand the 'local' context, and its problems and issues. The importance of the local context was key in this case, to understand the support needs of citizens and local sub-groups of citizens. Early evidence from interviews showed a dependency of local government on central government (in particular ODPM) for additional 'windfall' capital funding, but does not identify any real dialogue between local and central government in developing the agenda for community portal development. Further analysis shows that power and control is also increasingly asserted on local authorities from national, and even regional government, but without strong linkage between local, regional, and central government departments. A consequential effect from this is a gap between local and national portal development activities.

The research has shown that community portal development is more than a technological exercise. There is a need for a holistic approach to anticipate and respond to the *people* and *technology* issues (Mumford, 2003). Findings from the Community Portal (UK) 2002 research survey in Chapter 5 identify

gaps in understanding between the 'vision architects' and the 'operational implementers' of portal systems (Heeks, 1999, Jain, 2003).

Similar polarisation characterises the wider gap, and absence of dialogue, between central and local government departments, and the people within those departments that hold responsibility for portal development.
Issues of not having joined-up people systems and not having joined-up technology integration solutions are evident. Whilst technology development of Service Oriented Architecture (SOA) and use of Web Services offer integration solutions, the challenging problems associated with joining-up People systems persist.

7.6 Chapter Summary

This chapter has addressed and answered the research questions, synthesised the research study, and reviewed the Research Methodology (including use of actor-network theory, and context-process analysis).
The chapter analyses the cultural context, and its changes, over the five-year period of interpretive research observation from 2000-2005. The findings of the Blackpool case study are addressed as outcomes from the overall research exercise.

8. Chapter 8 Research Lessons, and Recommendations

8.1 Introduction

This is the concluding chapter of this thesis, addressing lessons learned from the research exercise, and giving recommendations for further work.

8.1.1 Overall Contribution of the Research; Lessons learned, and Implications of the Research Survey and Case Study.

This section considers the lessons and contribution of the research from the perspective of managers', academics', and citizen users'. The contribution of this research study is visualised in table 8.1 below.

Table 8.1 (contribution of the research) identifies issues from three distinct perspectives of managers, academics, and citizens' (as portal service users). The issues are presented in three contexts of:

- Policy,
- Theory,
- Field of Information Systems

Table 8.1 Contribution of the Research

	Management implication	Theoreticians, Academics, policymakers	Citizen users
Contribution to issues of policy	• Ethical codes of practice for content publishers, including implicit and explicit guidelines for users. • Back-office/Web portal integration • Local/Central government engagement	• Strategic need to engage with Citizen end users. • Need for common standards. • Adoption of Service Oriented architecture, using Web Services.	• Need to engage citizens in development phases. • Provision of tools to support content development
Theoretical & Methodological contribution	• Literature Review • Cross cultural implication between Central and Local Government • Weakness in Methodology for systems integration	• Provision of a framework for investigating portal issues • Value of Interpretive inquiry • Reverse process of globalisation, contribution to macro theory • IT related 'micro case study' contributing to macro theory (Walsham, 1998) • portals as people and technology socio-technological systems • The need for Service Oriented Architecture using Web Services to join-up technology. • Need for new systems to join-up people	• Citizen contribution to central strategy
Contribution to the field of Information Systems	• Need for dialogue between central and local government portal developers. • Bridge gap between vision architects and operational implementers of portals • Joined-up *technology* Solutions. • Joined-up *people* solutions	• Political and cultural analysis contribution to literature • Presents critical view of information age capability of virtual systems and portal deployment. • Indications of the use of Context Process analysis for novice researchers, the need for multi-disciplinary teams. • New definition of Civic and Civil portal types	• Critically important need to engage Citizens with development architects

These findings are collated from the:

- Literature Review in the earlier chapters;
- Community Portal (UK) survey 2002; and the
- Case Study findings.

8.2 Research Lessons

Nine lessons follow; these arise from the research exercise, with explanation of their origin in the work undertaken.

8.2.1 Lesson 1 Community Portals should be considered in a wide perspective. There is a need to view the broader socio-technological context in citizen - portal relationships.

Community portal development has been researched in the contexts of technical, organisational and human aspects.

The research findings provide abundant evidence of a shift towards digital government (e-Government), where the Civil / Civic portal is a significant component, within a wider set of potentially transformative changes, delivering new services for citizens through interactive service channels.

Analysis of portal development in central, regional, and local government in the UK has identified the existence of a culture gap between central and local government developers (Musgrave 2004). Commentary on global aspects of portal usage (DeCindio, et. al., 2001, Gurstein, 2004, , Romm and Taylor,

2000), confirm this is not a specifically UK issue, and the research evidence from the 2002 UK Survey can be contextualised against the effects of globalisation and community portal development world-wide.

During the research period 2000 – 2005 a shift has taken place in which the topic of community portals has migrated from the domain of telematics to the new field of community informatics (Gurstein, 2004), representing the broader socio-technological endeavour of community portal development.

Schuler (2005) finds that 'technology on its own is not a panacea for citizen access to government services and citizen-citizen interactions'. Chapter 2 pointed to Mumford (2003) who explains that 'technology is only one piece of a very complex puzzle', and in this context technology is not the only driver. The need to understand portal requirements from a citizen user perspective is essential. The *'People'* element, especially in use of local champions, is a critically important factor in development, implementation, and sustainability of community networks (Gurstein, 2004, Mumford, 2003), and should therefore be a prime driver of community portal development.

Such argument precludes analysis of community portals based solely on technological determinism, but until recently there has been a relative lack of academic research that straddles the domains of telematics and social systems (Bannon & Griffin, 2001, Romm & Taylor, 2000). In particular, there was a paucity of evaluation of the technical architecture of community portals.

According to Bannon & Griffin (2001, p 40) commenting on community network projects,

> 'while there is a wealth of anecdotal material as to the successes and failures of such experiments, there is, unfortunately, a lack of objective evaluation studies'.
>
> (Bannon & Griffin, 2001. p 46)

Three linking strands of social, technical, and information systems were identified in Chapter 2 as being inexorably intertwined in the community portal context, giving linkage between people and technology in a socio-technological system. Development of information systems involves a complex interaction between the user and the technology (Buscher and Mogensen, 1997) and this is the case with Civil / Civic portals. The *people* issues are a significant factor in Civil / Civic network development.

This research study commenced as a predominantly technology driven exercise, but the literature review justified a wider scope for the research to consider *people* issues for users, as well as the *technology* issues for developers.

Research analysis (Chapter 5) of *people* issues, and the *technology* issues finds a lack of 'joined up technology', and further need to 'join up people'; in particular for systemic linkages between central and local government portal developers, or the citizens that the portals serve. The research evidence from the Community Portal UK Survey 2002 finds that community portals are difficult to implement, and that software currently available (2000-2005) is still in its relative infancy. This is evidenced through analysis of responses to

Question B14 of the 2002 survey (Chapter 5), which finds only 5% of respondents identify interactive on-line service channels (e-Business). This finding is corroborated by similar results in the SOCITM survey for 2002 (reported in 2003) that identifies only 10 out of 468 (2%) of local authority web sites (portals) possessing 'transactional' capability. Individual community portals at UK local authority level are found to be insular developments that are not readily transferable, or capable of easy replication across government departments or between local authorities. Subsequent SOCITM survey results reveal an increase in percentage numbers of 'transactional' sites rising to 5% in 2003, and 10% in 2004 (reported in 2004 and 2005 respectively. These statistics are profiled graphically in figure 5.5 (Chapter 5).

Although the 2002 research survey was UK based, the findings are representative of the experience and case studies (e.g. Blacksburg, Virginia) of portal systems are developed and deployed across the globe (Carroll and Rosson, 1996, Cohill and Kavanaugh, 1997, Patterson, 1997). DeCindio (2001) discusses the Telecities (Case study of City of Milan) development and points to People and Technology issues of 'citizen engagement' as essentially important to the portal development process.

The research conducted identifies a lack of 'joined-up People' systems, and a lack of 'joined-up Technology' systems.

8.2.2 *Lesson 2 Cross-cultural dimensions are important, and there is a need to build new relationships between existing groupings of people.*

This lesson draws from the findings of the longitudinal study of Blackpool portal development initiatives, by illuminating the tensions existing between different groupings of developers and users.

The case study highlights the need to examine the dependencies, (and separations), that exist between:

- Local, regional and central government.
- Local government and local citizens.
- Citizen-citizen relationships and sub-groupings.
- System architects and system implementers.

Cross-cultural factors are identified as a significant issue in the Blackpool case study. Table 8.2 shows a summary of findings of this inquiry together with indications of how each might affect the process of community portal development.

Generalisations are not implied, as findings are based on data from a single case study, however the same cross-cultural factors emerge in the practitioner literature, for instance Curthoys and Crabtree (2003) reach similar conclusions in their iSociety research. The Morino Institute reports (1994) identify the need for a local focus to community network development, and this is supported by recent literature (Castells, 1996, 2000, Hunter and Beck, 1996, Heeks, 1999).

Although Romm and Taylor (2000) never fully engage with the importance of the use of information technology for community development, use of IT is implicit in their arguments in support of local development; an obvious example being the phenomenon of social relations through on-line communications facilities. For the purpose of justifying the fundamental arguments for this thesis it is important to critique the debate concerning local development and citizen participation as linked to lowering the barriers to community networking by community engagement. Deployment of telematic systems to support community network service development (including the community portal) led to early optimism (Gurstein, 1999) that community regeneration can be achieved through the liberating and enabling role of IT in community networking, following the collapse of some traditional industries, e.g. fishing, coal-mining, etc. Bannon and Griffin (2001) find such optimism unfounded and express caution about over-claiming the capability of community portals to impact appreciably on regeneration, especially when broadband services are not yet pervasive in the UK. The UK survey 2002 findings do not identify support for regeneration as a key objective. Responses to Question B6 indicate 12% of Local Authorities declare regeneration as an objective. Although interview evidence identifies regeneration funding as an income stream to support portal development activities, the interview probes failed to endorse regeneration as a key objective.

Ohmae (1990) is an advocate of the idea that "cultural convergence" is taking place and the process of cultural convergence over time will largely eradicate issues of cross cultural difference. This optimistic view tends to ignore the resilience and "embeddedness" of culture. With regard to community networks acceptance of the existence of national, regional, sub-regional and small group culture makes the suggestion of the convergence ideal simplistic and facile. Even if local and small group culture can be manipulated,

Levinson and Asahi (1995) argue that national culture is more resistant. The deep "embeddedness" of social factors such as tradition, and historical background are, they argue, unique.

Support and preservation of local culture needs to be anticipated and included in the response to development of community portals. This reinforces a requirement for locally driven responses, probably lead by local authorities within the UK. A necessity exists for tools and facilities, at sub-community level, to enable local publishing of content pages within the community portal, by individual 'champions' drawn from within the community.

Table 8.2 Cross-cultural differences affecting the process of Community Portal development in the UK

Central/Local Government cross-cultural theme	Effect on Community Portal development process at Central/Regional/Local government levels
Central Gov "know best"	Disconnection between Funders and the funded.
Lower level of technical capability and resources in Local Gov	Inability to resolve technical complexity of systems integration
Islands of Government	Inadequate dialogue to optimise benefits from portal capability
Lack of coherent strategy	Everyone bidding in the same pot.
Communication gap between vision architects and systems implementers	Gaps in understanding of system expectations.

Comments in table 8.2 imply that the problem of *Technology* resources is compounded by the *People* issues, and attributable to different cultures between Central Government and Local Government departments. Gaps in understanding, and lack of collaboration, between officers in Local and Central Government services are findings that are symptomatic of a cultural divide between Local and Central Government departments. The culture of non-cooperation across UK government is seen as the most substantial obstacle to sharing services, more so than legal or IT issues (Kablenet, 2004a).

Gaved (2004) points to Jain's suggestion that there is a divide between:

> "...the envisioners who dream about what technology can do, the technologists who understand what technology can do, the funders who have

> the money but do not necessarily know how best to spend it, and the implementers on the field who know what solutions are needed."
>
> (Jain, 2003).

These traits are evident in UK government portal initiatives and account for many of the difficulties encountered in community portal development.

Examples in Musgrave (2005) show that *centralisation* of development and support of community network services at the national government level would be unsustainable, and a *distributed* development is envisaged. To achieve this there is a critically important need for joined up thinking, planning, and development between Central, Regional, and Local government departments, and cascading to individual officer level. Joining up at each of the *People* levels is necessary, ranging from Politician (eChampion) to Government Officer level; Government Officer to Citizen groups; and Citizen – Citizen interactions.

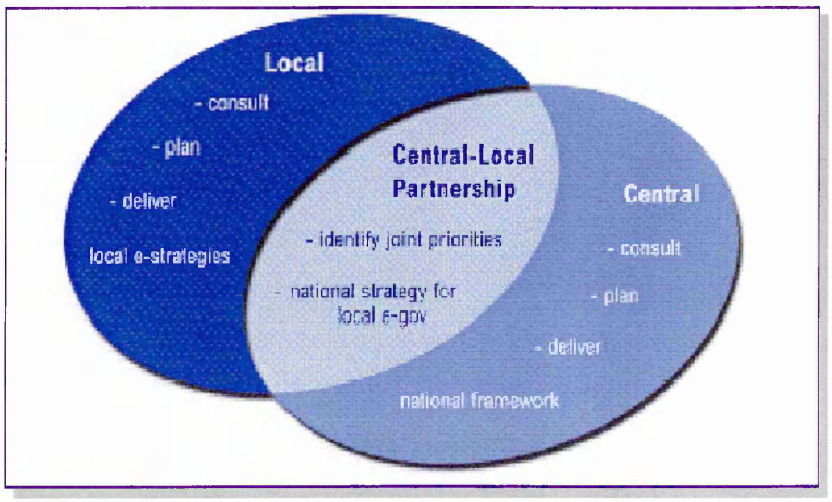
Cultural differences that exist between Central and Local government departments are creating a gap in understanding, and lack of collaborative development. The UK government aims to bridge this gap through improved dialogue between the Office of the Deputy Prime-Minister (ODPM), and the Office of e-Government (OeG) (eGovMonitor, March 2004). Improvement is evident through recent UK initiatives such as the Citizen Relationship Management programme, with its *'Integrated e-Government Delivery Roadmap Framework'* (Devin, 2004). This UK national programme is aimed at saving time and resources in re-inventing the wheel through central

development of tools, components and best practice standards (www.crmnp.org) (accessed July 2004).

Leicester (2001) argues for a radical change with new models of service delivery and a new model of politics and organisation to match. Outlining a vision for local service delivery based on the concept of the 'community portal' he argues, "local government should and could be leading this revolution rather than trailing in the wake of Whitehall."

It may appear naïve to focus on basic principles of communication between people and inter-operability between technical systems, but a reality is that fundamental 'people and technology' issues need to be resolved and cultural differences acknowledged and circumvented, in order to optimise benefits from community portal development. Central-local relations require partnership between local and central agencies (ODPM, 2004). Communication through central-local partnerships (figure. 8.1)

figure. 8.1. Central-Local Partnerships



(source: ODPM, 2004)

Vision leaders need to communicate their planned development in detail to *'people'* who will be expected to undertake the operational implementation and system development.

The cultural divide in this case is between central government departments and local government departments. This extends beyond the 'islands of technology' concept to an amplified divide between central and local government departments that amounts to an analogy of them being equivalent to foreign lands, almost to the extent of alien culture and foreign languages that are not easily interpretable and understood across the boundaries that exist.

The implication and contribution of this case study is that culture differences between central and local government departments appear to hamper the

potential progress in portal development and deployment. Absence of serious dialogue between Central/Local development teams restricts access to resources, software tools, and toolkits that may have been developed centrally and yet local authority personnel may be unaware of their existence. It also indicates that cascading of global effects into local development are not going to be just uni-directional, i.e. from central to regional/local departments as in a traditional model, but increasingly examples will arise where local events and development will influence the shaping of global structures.

8.2.3 *Lesson 3 The current state of community portal development reflects a lack of in-house resources in local authorities. There is a need to understand the larger picture and plan long term.*

The Community Portal UK Survey 2002 found initial lack of strategic investment as an influencing factor hampering portal development.

In the Blackpool Case Study the existence of limited in-house development capability was recognised early in the planning process, and remedied by collaborative partnering with an external developer (Granada). The strategy in Blackpool could be indicative of short termism, given the need to continue to evolve and develop the system and its portal functionality. However, the gains appear to outweigh the limitations and constraints. Recent strategic action has bolstered the situation with the procurement of a proprietary Citizen Relationship Management software product for its system integration.

The work of Mumford (1985, 2003) in the IS area has been particularly influential by prescribing a socio-technological view, and the portal research undertaken contributes to that body of literature. Mumford asserts there is a *'need to understand the bigger picture – the total problem situation - into which the jig-saw piece fits'* – (in this study a community portal). This inevitably leads to consideration of business process change through socio-technological intervention.

The Customer First programme in Blackpool is the umbrella that the CommunityWise portal fits beneath, and this generic programme serves as a process change agent.

Schuler (2005) is pessimistic in his description of activities at the Seattle Community Network (SCN); identifying a need to "overcome the current inertia of inaction that exists". Although SCN still exists, it prominence as a beacon of digital network-based community networking in Seattle has been much diminished. Schuler identifies a problem in SCN as "an incoherent 'core' where the mental model is not shared by the principals of the organisation". A twin track solution is advocated by Schuler (2005):

1. Diagnose and repair internal barriers that are inhibiting progress, and,
2. Re-design the orientation to more effectively interact with the external environment.

(Schuler, 2005)

Similar problems exist in Craigmillar Community Network (Edinburgh, UK). This formerly acclaimed development (Slack, 2000) has undergone fundamental transformation as volunteer energy dissipated and Scottish Office funding was withdrawn. Inadequate resources exist to sustain this portal (Craignet), and in this case Schuler's recommendation of 'redesigning the orientation' is relevant.

8.2.4 Lesson 4 New portal types have emerged - the 'Civic portal' and the 'Civil portal'.

The generic term community portal applies to technology as a presentation medium for community networking and civic networking. Although the intrinsic properties and functionality of portals are similar, the generic term community portal now segments into 2 distinguishable categories of Civic portals and Civil portals.

The new term of Civic portal is applied to portals that are characterised by their:

- top-down nature,
- government organisation sponsorship, and generally associated with
- information-push to citizens.

The second category of the Civil portal is now linked to characteristics of portal development that is:

- bottom-up approach,
- generally led by non-government organisations, and

- typically community activist driven.

Arguably different cultures exist in the Civic and Civil portal domains.

Influence between the two types and the actors related to each is an important issue, and community engagement is a key term in any discussion of both portal types, but semantic differences exist in the meaning of this, due to the top-down push and the bottom-up pull that is characteristic of each type. Bridging between Civic and Civil portal types is a challenge, but successful implementation can improve the overall engagement and dissemination of information.

Accepting that Civil / Civic networking exists world-wide (deCindio, 2001), with a lot of the early development originating in, (and emanating from), the United States, the global context cascades right down to the local levels of implementation. The effects of globalisation are often discussed in terms of the impact (quite often negative) that information systems have on the global developments. For example, the work of Martin (1995) identifies the effects of implementation of IT in creating a "cultural colonialism".

Development in Manchester indicates a polarisation that is taking place. Manchester was a founding member of Telecities, and Manchester was the home of one of the early adopter UK public access computer communications and information system - the Manchester Host, developed by Manchester City Council and backed by European Union funding. Poptel who run the Host is

a full Internet service provider but the original Host site is now privately operated as WWW.manchester2002-uk.com. (accessed March 2005). It has a wide range of users, including businesses and public sector bodies. The extensive Manchester web site (www.manchester.gov.uk) (accessed March 2005) now has interactive service channels and has effectively developed into the Civic portal.

The Manchester Community Information Network (MCIN) (www.mcin.net) (accessed March 2005) is a registered charity and limited company working across Greater Manchester. MCIN run the MyManchester site www.mymanchester.net (accessed March 2005) and 18 other Civil portals.

This indicates the polarisation that has arisen where the council websites have developed advanced web service channel capability and are becoming effectively the Civic portal. Civil portals that are community activist driven include Manchester Community Information Network (MCIN), in this case a registered charity that supports other Civil portal site development. (see Appendix 4).

The evolution of the community portal term over the past decade, with identification of two distinctive portal types *(Civic / Civil)*, leads to the interesting area of investigation of activities at the boundary layer where the two portal types can interface in union with each other. Community engagement is a key term in any discussion of both portal types, but semantic differences exist in the meaning of this. The potential divide between a Civic

portal and a Civil portal in the same geographic area may now be bridged to improve the overall engagement and dissemination of information. Case study of MCIN shows that information generated by citizens for use and dissemination in local geographic community area Civil portals, is now being used across the portal boundary to populate content pages in the Civic portal for the geographic area. Simple content authoring tools exist to enable information to be produced by citizens for publishing via the Civil portal.

This research argues that portals of both the 'Civic' and 'Civil' types are socio-technological endeavours involving people and technology issues. Both portal types employ similar 'web' technology for their functionality, but the people issues arising from culture difference between Civic and Civil portal hosting organisations, with their distinctive top-down, and bottom-up approaches, are found to be difficult to surmount (Musgrave, 2005a).

Whilst technology advances e.g. Web Services, enable integration of systems in ways that were previously impossible, the challenge becomes creation of a sustainable model (supported by electronic e-Technology) that will enable 'joined-up people' solutions.

Different cultures exist in the Civic and Civil portal domains, but within the e-Confluence boundary zone, (where *Civic-meets-Civil*), the sharing of information, data, and services across this potential union territory requires concord and common consent to bridge-build. Metaphorically, the e-Confluence Zone is potentially turbulent in nature with contrary currents, and

represented as currently uncharted waters, due to different agenda's, different priorities, and different levels of capability in both sectors of Civic and Civil portal developer organisations.

Schuler (2005) identifies a new paradigm of Civic Intelligence to describe the capability that organisations and society use to find solutions to environmental and other challenges collectively. This combines Putnam's (1995) *bonding social capital*, with civic *bridging social capital*. Schuler uses the recent experience of the Seattle Community Network to highlight the 'inertia of inaction' that currently exists, asserting the it is time to re-examine the mental model in relation to the original community network and its capacity to act.

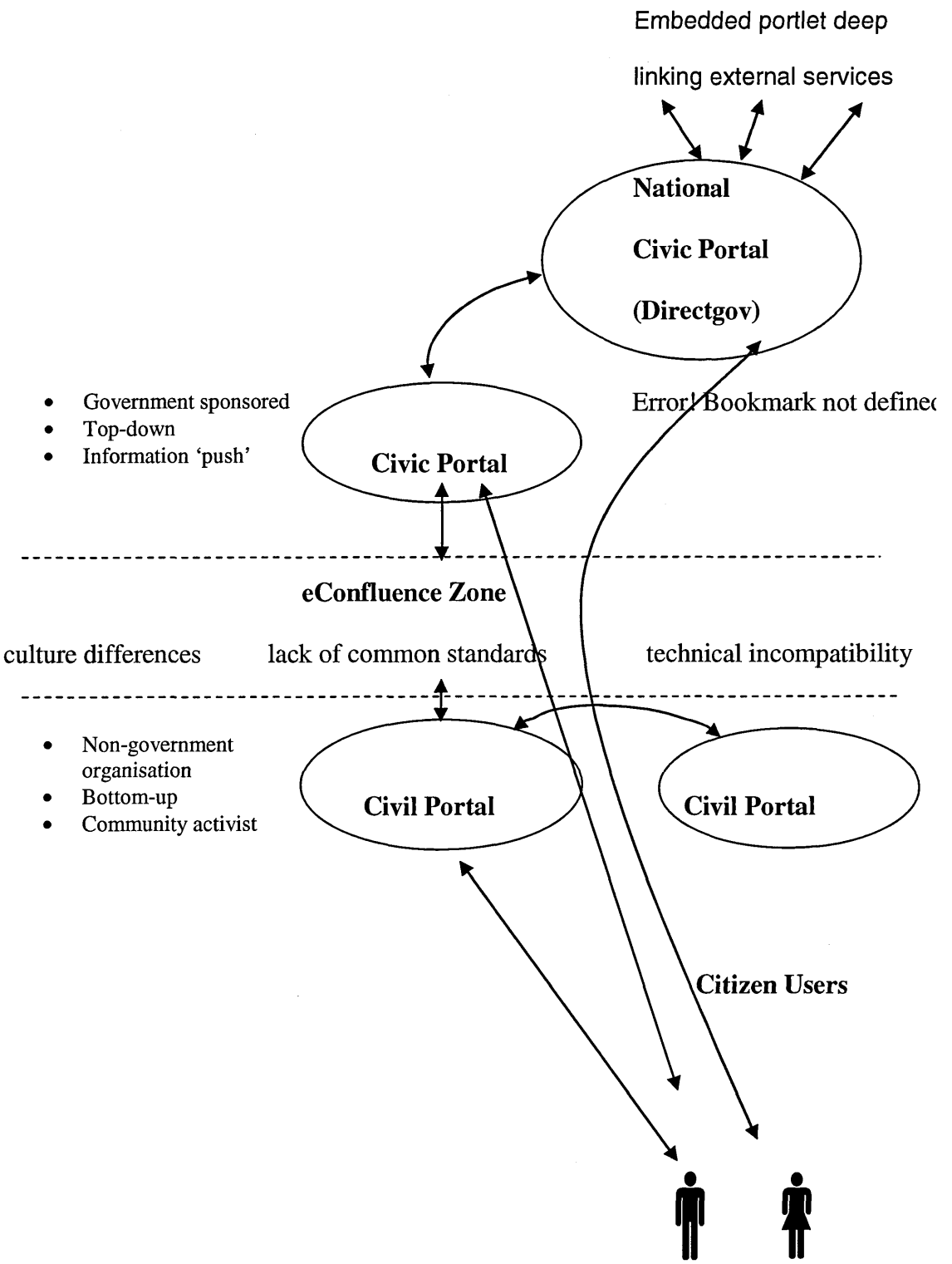
The research findings are that a change is happening whereby the technology is now empowering the citizen to function in a far more individual manner than was previously possible, with personal access to the internet, personal content creation tools and personal communication tools, giving the ability to interact through technology solutions in a far more individual way. If this is the case, can the individual community networker interact with a civic network portal service? Is it a collision or collaboration in this e-Confluence Zone? If it is currently a collision clash of cultures, how can this be transformed into collaboration? Contentious issues can be free speech expression through non-mediated on-line forums, but can these be overcome through community engagement at the individual citizen level, with devolved responsibility to the individual or community group?

People issues are arguably more complex than the Technology, which in itself is not straightforward. Cross-boundary activities can be encouraged, supported, and nurtured across what is typically a cultural divide, as well as a logical boundary of different portal technology solutions (see Figure 8.2).

The case study of a Civic portal in Blackpool (UK) (Chapter 6) is one that categorises as an '*early majority*' developer of technological innovation. This shows that lessons learned from early adopters such as Manchester Community Information Network (MCIN) are being applied by deep linkage into the community to engage with citizens and actively involve them in the design and development of the portal services contained in the civic portal.

Other 'early adopters' such as Alston Cybermoor (UK), www.cybermoor.org (accessed March 2005) are themselves distinctively different development examples. Alston is a rural community dispersed over a large geographic area in a relatively remote area of Northwest England (UK) – (see Appendix 4). The Cybermoor portal team is now active in forging new links between the Civil portal and the local Civic portal (Carlisle Council) to grow capacity by wider community engagement. A sustainable model is needed to support the growth in on-line information gathering and publishing (upward push) to benefit the wider community, and bi-directionally downward pull of information for individual citizens that may be currently unavailable. This wider communication of information would encourage more citizens to choose to use the portal services of both the Civic and Civil community presentation mediums.

Figure 8.2 Civic / Civil eConfluence Zone and Different Users



This research points to the need for a new dialogue to enable routine exchange of information between different portal types – Civic and Civil – to enrich the overall information available to citizen users in whichever community role they fulfil.

There is a need to reach out across the existing divide between Civic and Civil portal development areas to bridge across and thereby extend the functionality and information resource. This may assist in overcoming the philosophical inertia that Schuler (2005) currently claims to exist and enhancing capability in a way the results in more citizens choosing to use the portals that are available to them.

The Blackpool case study of the relationships (and absence of relationships) between local, regional, and central government departments points to nothing less than cultural difference, (and distance), between national and local agencies. There is an essential need to bridge the gap in relationships between Central Government developers and their departments, and Local Government and their portal developer teams. (see Lesson 6).

8.2.5 Lesson 5 The potential for advanced ICTs (in particular Service Oriented Architecture and Web Services) is significant for Community / Civic portal functionality, integration, and interoperability.

The adoption of advanced Information, Computing and Communication (ICT) technologies, i.e. telematics, and informatics, is transforming the process of

community networking and portal building, in particular through the availability of 'middle-ware' for systems integration between the 'web front-end' and the 'back-office' systems. Possibilities now exist to create interactive information 'channels' to facilitate and support on-line transactions between citizens and government at various levels, along with citizen-citizen interactions.

A need is to join up the *Technology* giving interoperable systems and modules that easily plug together. Adoption of common standards, and common components, is necessary (Linthicum, 2004) to simplify interconnectivity of software systems. Adoption of 'plug compatible' software, and use of new elements called Web Services creates the transformation to enable connections between systems that although different and disparate comply to common standards for web service connection.

Use of Web Services for business-to-business transactions is gaining ground in many organisations, and this technology will become the standard by which portal services will be integrated with different applications (Barry, 2003). This is part of a larger transformation as a shift to a Service Oriented Architecture for systems development.

The goals of a Service Oriented Architecture (Erl, 2004) are use of Web Services with adoption of common standards (including web services and eXtensible Markup Language (XML)); and use of common components (in particular Open Source Software). In a service oriented architecture, rather than interconnecting different systems with interfaces at the top

portal/presentation level, or alternatively integrating data in a single large database at the bottom level, the new way is to expose the middle tier application logic level as a service (Web Service). Information (as messages) is then sent in a format that can then be utilised (consumed) by other different applications. (Olivier, 2004).

Development of a Service Oriented Architecture, and use of Web Services, is of significant relevance to portal development.

Existing enterprise portal products in the commercial sector demonstrate functionality that could be achieved in Civil / Civic portal systems; and research in the eScience GRID community offers functionality, in particular with log-in authentication to the portal that can be applied as advanced system functions within a community portal.

8.2.6 *Lesson 6 New IS development approaches are needed for community portals. These must include improved citizen engagement.*

The research has contributed a critique of the existing approach to community portal development, exposing its limitations and the perception of a 'false dawn' (Musgrave, 2004) in the current portal offer. This research exercise has illuminated issues and problems that need to be taken into account in future developments. Further work by others is needed to probe the deployment of software using advanced interfaces to integrate front and back office systems. Citizen engagement is essential to ensure a match between

services developed and services needed by citizens. This will have an impact on how e-service channels are used and valued by citizens.

A totally central developed and supported government portal would not be a panacea; a distributed system of computer services better fits the needs for community portals in the context of UK Government.

The UK government is adopting a model where 'intermediaries' (e-Envoy, 2004) (Chapter 2) are taking responsibility for individual service development and support within a centrally organised framework. Access to these services from local authority portals can be achieved by embedding a *portlet* (see Chapter 2) within a local authorities portal that links seamlessly (and invisibly to the user) to the chosen service.

Viewing the process of portal development from the engineering perspective is potentially disastrous as it takes a view of IS development as culturally neutral. The lessons of the research discussed above demonstrate this is not so. The political, management, and cross cultural issues for portal developers, (and citizens as portal service recipients), identified in this research cannot be addressed by quick fix solutions. A cyclical iterative process is needed to reach a mutual understanding of citizen requirements. This requires an overlaid coupling to the potential technology options to support new information channels that are beneficial and valued by citizens.

Lesson 2 summarised some of the key cultural differences that may affect the process of IS development for community networking. The obvious action to take from the differences is to recommend improved dialogue between local authority developers who may be faced with overwhelming problems that exceed their technical capability, and central government Research and Development teams who may not possess insight into citizen needs at a sub-community level.

To foster and maintain long term trusted relationships between Central Government and Local/Regional government portal developers, (or development teams), a process of holistic mutual education should take place. This is difficult to prescribe but some concrete suggestions, which would make a positive impact.

It is suggested that:

- Local government e-Systems department managers should be encouraged to visit Central Government portal development managers (e.g. DirectGov, enrich.gov, Government Gateway, etc.). Ideally, they should be encouraged to investigate and analyse the existing national portal sites and services (e.g. DirectGov) as preparation. This may form part of an induction for managers and system developers as part of their staff development.
- This could be followed by a series of on-going seminars that may be delivered by Central and Local/Regional staff or by e-Service managers concerning key issues and dimensions that bridge the Central/Local government divide. The issues should address both People and Technology topics.

Importantly, the process should be on-going and focused on iteratively building mutual understanding. Workshops on topics such as cultural difference – or perceptions of cultural difference – and a 'central/local divide', and how to redress this should not be seen to rest with one group i.e. central government, or local government, but should be a shared problem in the interest of the government as a whole. Such 'education' should not be of the "quick fix" training seminar variety, but alternatively foster opportunity for a serious exchange of views between Local Government and Central Government e-Services teams and team members. Secondment of team members for short-term periods in a bi-directional exchange would be mutually beneficial in understanding and resolving problems, misunderstandings, and misconceptions.

There is evidence in the preceding chapters (see Chapters 2 and 7) of new initiatives between the Office of eGovernment and the Office of the Deputy Prime-Minister (ODPM, 2004), and this is helpful dialogue in bridging the current gap.

The activities achieved through neighbourhood forum activity, (described in the Blackpool Case Study), confirms the benefit of citizen engagement. The difficulty in effectively communicating the benefit of a portal system when it was yet to be built in Blackpool were echoed in the experience of Arnold, Gibbs & Wright in their paper - *Intranets and Local Community: 'Yes, an intranet is all very well, but do we still get free beer and a barbeque?'* (Arnold et. al., 2003). They point to a need for new approaches to IS development

coupled with citizen engagement, by identifying five factors (see Chapter 2), which have the potential to contribute to a low rate of uptake of intranet services in a case study of Williams Bay Australia.

8.2.7 *Lesson 7 Gaps between Strategic Vision and Operational realisation need to be 'bridged'.*

Heeks (1999) (see Chapters 2 and 3) asserts that gaps exist between the high-level vision architects of portals and those charged with the operational implementation of the portal system.

Interviews (subsequent to the 2002 survey) with both local and central government personnel proved uncomfortable at times in that they exposed the low level of dialogue, and consequent lack of mutual respect and trust that existed between developers in central government and developers in local government, and more generally between developers and citizen users elsewhere. It seemed the case that with both central and local government personnel interviewed that each party was competent, capable, personable and friendly; and as such for the interviewer it seemed that if contact was established between a central government and local government department they would be pushing on a bi-directional open door, but the reality is a gap and absence of dialogue. Consequently mis-trust arises and negative rhetoric abounds.

To a lesser extent this experience of low level of dialogue was echoed in the early stages of a Blackpool Case Study, but a positive change was identifiable once the Community Forum meetings were established. This strengthened the argument (deCindio, 2003) for Community Engagement.

The research findings of the 2002 survey, and subsequent interviews, suggest new forms of relationship opportunities should be fostered and cultivated. This is particularly the case for central government managers who need to get beneath the surface of development plans, specifications, and designs, to understand the grass-roots problems facing citizens wishing to engage with government for on-line interactive service access and transactions. Use of Local Government departments as an intermediary would give access to citizen groups who are considering the needs for improvement in interactive service provision. Inevitably the relationship between individual citizens, citizen groups, and designers is likely to be dynamic, with links forming and re-forming between groupings of involved persons.

Improved communication between the eGovernment Office (formerly eEnvoy) representing central eGov development, and the Office of the Deputy Prime representing local government is only a start point and the need is for Central Government not only to talk to Local Government and overcome issues of culture difference but to work collaboratively on project planning, development and implementation.

Although there has been emphasis focusing on Central/Local government relationships, the Blackpool Case Study (Chapter 6) finds that internal relations within a Local (or Central) government department would benefit from similar scrutiny. The Blackpool Case Study revealed a lack of internal detailed communication that led to misunderstanding, where the system developers and e-Systems team members did not have sufficient insight into the architect vision of the proposed development.

These findings support the argument by Heeks (1999), Jain (2003), Schuler (2005) that it is the case of busy people at all levels i.e. Vision Architect, or Systems Implementer allowing lack of detailed communication to cause gaps in understanding and wrong interpretations to happen. A potential remedy to this dilemma can be found in the model posited by Schuler (2005) who introduces the concept of Civic Intelligence, and a model for re-examining community networking endeavours where there may be an incoherent 'core' where the 'mental model' of the development is not shared by the principals of the organisation.

8.2.8 *Lesson 8 There is essential need for 'joined-up' People; 'joined-up' Technology; and the 'interpreter' as a catalyst to achieve this.*

Extending the commentary from Lesson 7, a further need is identifiable. From analysis of the Community Portal UK Survey 2002 data the subsequent interviews revealed gaps, not only in technological capability, but also in detailed understanding and insight into individual citizen needs and

requirements. A range of factors are involved in this analysis, but following the interview experience and comments recorded, the culture gap perceived between central and local developers seems 'real'. The need for a 'cultural interpreter' *(to operate in the middle ground between those who would have local knowledge and those deployed centrally who may have access to high level skills and resources for portal development*), is evident.

The research undertaken finds that technology solutions are currently hampered by lack of integration. This finding is not particular to portal systems, but is a common issue across the IT field at the present time (2005). Building a Service Oriented Architecture and use of Web Services (Chapter 2) offers a new technology solution for systems integration to enable joined-up technology.

Research findings of problems in not having the equivalent 'building block' architecture capability for 'joined-up people' systems highlights a need for citizen participation in the overall portal development process. Wilson argues (Wilson, 1999) that it is the context of participation that is important, but despite the growing number of participatory exercises, little knowledge exists as to their effectiveness in community networking development. Participation needs to be seen to amount to more than a simple listening exercise. In other words, the involvement of local citizens in the portal development planning process must lead to real changes to avoid the risk of raising expectations that are subsequently frustrated by inability to deliver the anticipated new services and interactive service channels. The need for join-up between the

developer and those for who the systems are being developed (Heeks, 1999, Jain, 2003) is comparable for systems integration in the technology domain.

The implication is that - those practising in the area of portal development should be cognisant of the issues around the types of activity that will be beneficial to citizens, and this can only be achieved through engagement with citizens. Local teams are best placed to be able to understand, interpret and communicate citizen requirements for inclusion in portal specifications.
The Blackpool Case Study found that once trust has been established through face-to-face contact between developer and local citizen, asynchronous on-line communications can evolve the necessary dialogue in an iterative manner – as effective citizen consultation, either with individuals or groups.

These arguments summarise as the need for Joined-up People, concurrent with Joined-up Technology solutions.

> Misquoting Donne (Donne, 1631) 'No Portal is an Island' - the argument for adoption of common standards and use of plug-compatible common components is to give connection between 'islands of technology'. Research and development to produce and curate open source software objects, (to be lodged in a repository), will support developers of local community portals with ready made components to add functionality at the 'local' level.
>
> (Musgrave, 2005)

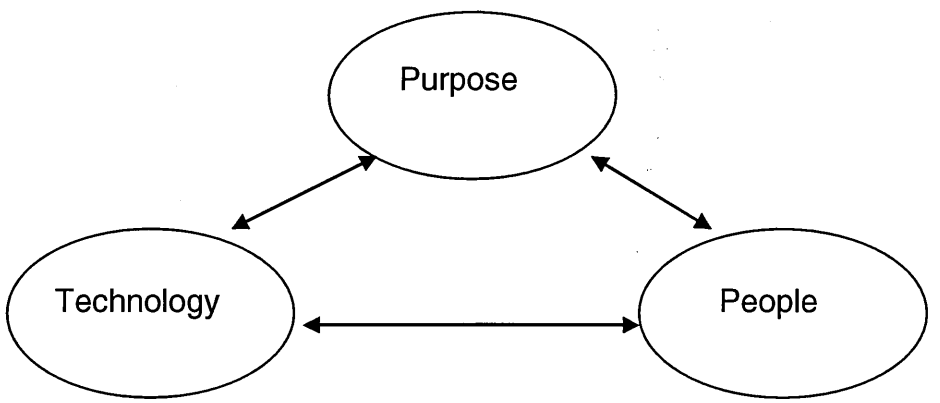
Improvement in available technology solutions, through the use of web services and common software 'object' components mean the *technology* can now be transformative. The combination of:

- improved collaboration between government departments;
- better communication between those driving the vision at both Central and Local government level, (and their operational teams);
- availability of system integration technology solutions (SOA and Web Services)

will manifest itself in improvements through joined up *people* and joined up *technology*.

The concept of a person as a catalyst to orchestrate dialogue and development between different cultures is offered as a means of pro-actively prompting dialogue, where dialogue may otherwise not take place, and creating the conditions in which such dialogue could flourish to give beneficial development in the systems to be created. The new *'purpose'* is then of triumvirate nature with *People and Technology* working to a common *Purpose* as a powerful combination (see Figure 8.3 below).

Figure 8.3 People, Technology and Common Purpose



8.2.9 *Lesson 9 Theoretical Frameworks proved to be effective tools.*

The framework for examining the issues involved in Community/Civic portal development provided an effective tool to structure the investigation. The issues arising from context-process analysis provide a novel insight into the perception of barriers to development for practitioners and researchers.

The critical view presented by the empirical work in this research study of portals (and their architects, developers, content producers, and "information age" practitioners involved in community portal service evolution), is in contrast to much of the speculative writing containing many superlatives concerning "cyber reality", "virtual worlds", etc.

The real world experience was found to be wanting and the concept of a "false dawn" is offered (Musgrave, 2004). The findings are important for those considering community portal development, and in particular draws attention to problems in disparate approaches in different sectors of UK Government. The research contributes, (through case study of a "messy" environment) to those organisation theorists or IS designers concerned with developing methodologies or frameworks. The interpretivist approach (Galliers 1991, Flood and Carson 1992, Klein and Myers 1999, Walsham 1995) and participatory action research (Checkland 1991, Lewin 1946, Mingers 1997, Whyte 1991) have proved appropriate for this research study.

The research has also contributed by evaluating the use of context-process analysis for such an investigation, and critiques the appropriateness of

interpretivist approaches. The research also provides insight and examples of the problems surrounding use of context-process analysis, which should contribute to future novice researchers. The limitations of the approach for a lone researcher, and factors such as the need for multi-disciplinary cross-sectoral (central+local) teams are significant.

The *'Field of Dreams'* metaphor (Musgrave, 2004) offers the tantalising prospect of a second-generation portal where the existing technology and people issues are solved, giving ubiquitous access to interactive on-line service channels for citizen interactions with government, including the availability of a wide range of software toolkits to enable content authoring.

8.3 Further Work and Recommendations.

In the spirit of the research cycle, the above lessons can be used as a springboard for further research. These lessons offer a number of suggestions, and policy level recommendations that will be disseminated in various forums. These are likely to form the basis of further academic papers for publication in scholarly journals.

During the research period of this work (1999-2005) the science of community informatics has gained support and position within the academic community. This new academic field embraces the wider context of *'people and technology'*, and there is optimism amongst its advocates that research investigation and outputs will solve some of the existing issues and problems.

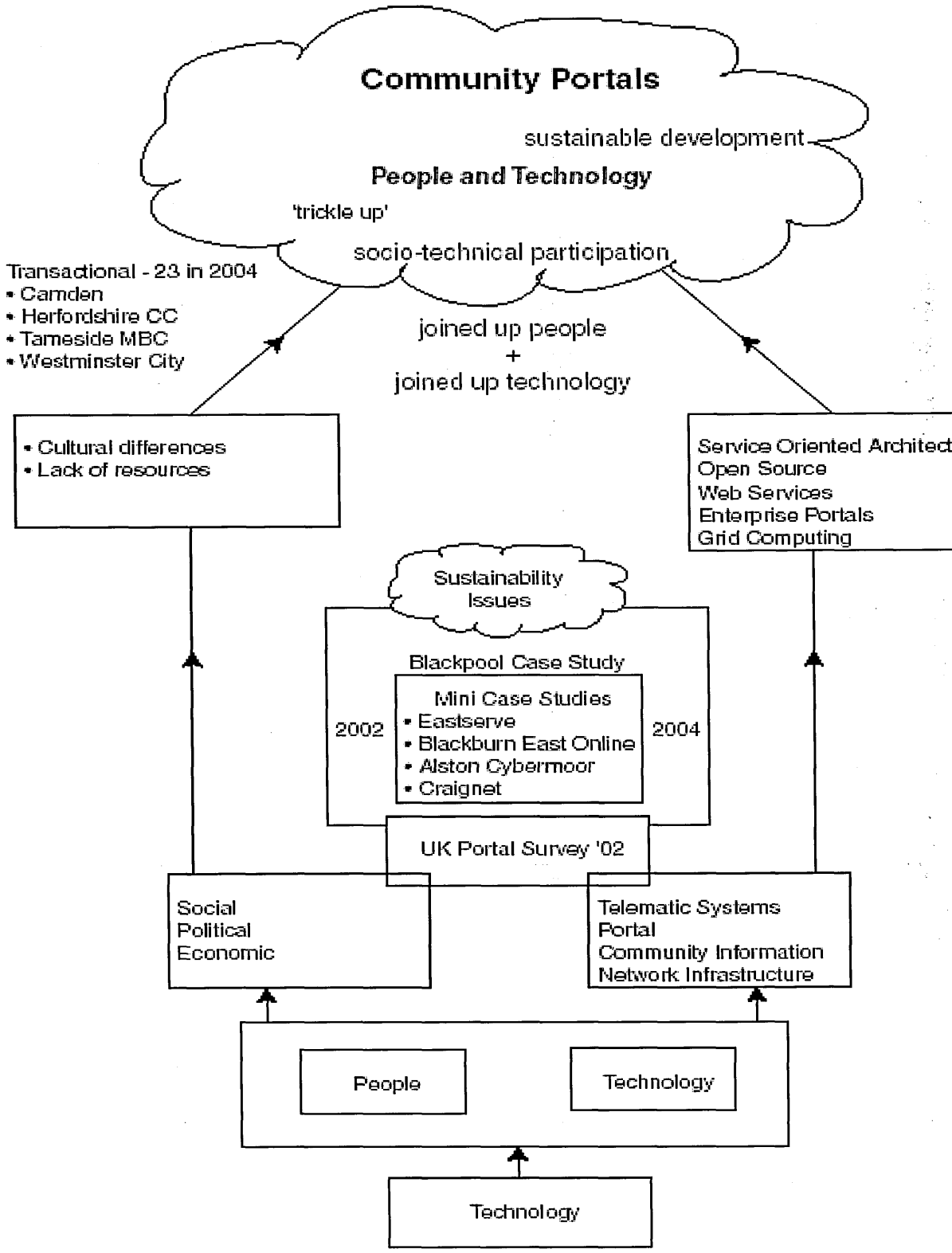
This research challenges the arguments that deploying community portal technology is necessarily associated with improvements in society, or in an individual's experience of his or her interaction with society at large, and with government in particular. Debates around community portals have gone through at least three discrete stages during the last decade, with the early optimistic accounts of various activist-entrepreneurs such as Doug Schuler (1996, 2005), Gurstein (1997, 2000, 2002), Castells (2000), and Beamish (1995) being questioned by those who doubt the value of communitarian ideals, and the effectiveness of on-line interactive services (Mansell, 2002 p1). Such debates have been linked to wider discussion about the politics of web-enabling communities (Horrocks and Hambley, 1998); inequality in access to web-based services (Lentz et al, 2000), and the social impact of this new connectivity (Doctor & Ankem, 1996).

The development of community portal technologies, and their relationship to broader social, and political forces, needs to be understood from multiple perspectives. Romm and Taylor (2000a) make the point that for some the development of community networks and portals has been viewed as a wholly technical endeavour. However, it is increasingly being recognised that the process of establishing and sustaining a community portal contains many sophisticated issues beyond the purely technical. Buscher and Mogensen (1997), point out that information system development involves a complex interaction between the user and the technology.

Development of community portals within civic networks is inevitably complex and cannot be left to a technological determinist approach. Survey evidence in Chapter 6 indicates that development of the community portal is necessarily part of the bigger picture of business process change in generation of transformative citizen service interactions. Embedding the development of the portal as a tool within the Service offer of a local authority gives community portal development a place within the organisational structure, and importantly a budget line for sustainable development funding.

Figure 8.4 visualises the overall research findings, indicating that portal development is not a solely technical endeavour. *People* and *Technology* issues exist as separate channels where problems currently exist in the domains of not having *'joined-up technology'*, and simultaneously, not having *'joined-up people'* systems. The need to resolve problems and deploy solutions to both *People* and *Technology* issues requires an on-going converged dialogue to understand and resolve both *People* and *Technology* issues. The emergence of Service-Oriented Architecture as a *Technology* framework offers opportunity to integrate technology systems (through generation and consumption of Web Services) in ways not previously possible. There is a need for a similar building block framework for joining-up *People* systems – in particular to bridge between Central and Local government departments in the UK. Annex 3 is a poster that extends these themes.

Figure. 8. 4 People and Technology Issues



8.3.1 Arising from this research the following recommendations are offered:

Recommendation 1: There is essential need for dialogue to engage developers with those for whom systems are being developed. This will tackle the Central / Local Government, and Government / Citizen barriers that are perceived to exist due to different cultures.

Future studies of community portals in the government sector must investigate the local / central, inter/intra government, and government / citizen department relationships; and how they influence – and are influenced by – the presence or absence of dialogue.

Issues of lack of joined-up people systems and the essential need for citizen engagement (Gurstein, 2004) are critical to successful and sustainable portal development. Developers cannot work in isolation from those who will become the users of the systems (Heeks, 1999).

8.3.2 ***Recommendation 2: Further R&D work should be led by on central development to give 'joined-up' technology, people, and purpose solutions. This is particularly the case for integration of front-office (portal) into back-office existing systems (e.g. databases).***

Interactive service delivery capability should be underpinned by development work on systems integration utilising new technologies of Service Oriented Architecture (SOA) and Web Services. Central direction of such work would optimise economies of scale, leading to specifications and common standards devised through dialogue between local and central government departments,

and government departments and citizens. Central production of tools and toolkits for use at local level would give efficiency gain. This does not argue for a centralised computer system. Central strategy and a distributed computer systems are a better fit. Use of specific emerging ICTs in facilitating this process should be actively pursued, e.g. use of collaboration tools, Service Oriented Architecture, use of Web Services to link applications, etc.

People issues would be positively improved through dialogue across the different cultures and sub-cultures that may be involved in portal development. This may be for example between Citizen and Developer, or Developer – Developer in different sub-culture groupings, e.g. Central Government / Local Government developers. Common purpose would arise through better understanding of the 'other' persons needs, issues, and constraints.

This Front Office – Back Office integration requirements for on-line interactive citizen service channels would be an ideal area for longitudinal study, examining 'People, Technology, and Purpose' issues.

8.3.3 *Recommendation 3 Community informatics is emerging as the core discipline for community networking and community portal studies. Civic portals and Civil portals should be investigated to determine their synergies and dissonances, to understand the opportunities for linkage between these two distinct portal types.*

Chapter 2 addressed the introduction of the new term community informatics (section 2.6.4). Gurstein (2000) is generally acknowledged as the originator of this title for study on how ICT achieves community's social, economic, political, or cultural goals. In looking at community networking in the context of community portals the evidence of cultural difference identified in the UK Survey in 2002 points to the need for 'people' with Janus qualities to address the duality that exists between culturally different types e.g. central and local government developers; Civic and Civil portal developers, etc. Brown and Duguid (1998, 2001) hint at the positive effects of "translators, boundary brokers, and boundary objects" in negotiating epistemic differences among communities that do not share practice. The existing dichotomies between Civic and Civil portal require further work and exploration of the differences and dependencies among these communities.

8.4 Closing Comments

From the outset this research investigation probed and analysed the wider issues of community portal development. Socio-technological arguments of *people and technology* issues revealed problems in not having joined-up *people*; not having joined-up *technology,* and absence of common *purpose.*

Methodologies of Service-Oriented Architecture (SOA) using Web Services, use of common standards (e.g. eGIF), now enable portal developers to join software applications in new ways for systems integration. No quick fix

technology solutions exist, and a structured methodology is required to adequately specify the components of service and service integration.

Joining-up *people* in the context of portal development is a case of brokering new dialogue to understand citizen requirements, or linking people who would not normally have opportunity to share ideas with each other. The concept of the 'interpreter' as a catalyst for better communication between sub-cultural groupings is a way of promoting constructive dialogue.

Common purpose, through share understanding, is a third variable to engage people and technology in positive development, with shared goals.

The dissertation began with the quotation:

If it be not now, yet it will come – the readiness is all.

Hamlet, Shakespeare

The study of community portals identified two portal sub-categories:

- Civic portal (top-down, government led)
- Civil portal (bottom-up, non-government organisation led)

This community portal research identifies the limitations and relatively primitive nature of this first generation of Civic and Civil portal software, compared with the existing enterprise portal applications of the commercial sector. Second generation products may emerge to provide further functionality and remedy – (in particular the lack of systems integration with

back-office existing business applications), but it is forecast that in the civic portal context they may lose their discrete identity, becoming embedded in the 'core' business systems for the e-Administration of government in the UK. Through this shift towards the core the civic portal services are likely to become sustainable. Civil portals comprise similar technology, but their bottom-up nature is typically problematic, with inadequate resources (both physical resources and skilled people) making sustainability difficult.

Linking top-down Civic portals with bottom-up Civil portals will give emergent properties and increased effectiveness.

The present limitations of generic community portal systems will undoubtedly be overcome through technology advances in the next few years. The need is to focus on the *'joining-up people'* issues through common goals, long term planning, and anticipation that the technology tools will be in place by the time the people systems are ready to utilise them in a transformative manner. In this sense *'the readiness is all'* and effort needs to be invested in the design of people systems, shared purpose, and new interactive service channels to delivery transformative citizen services.

The research concludes that in 2005 community portal (Civic + Civil) development is languishing in the 'false dawn' stage, yet solutions to technology and people issues remain elusive. The 'field of dreams' is almost in view, but solutions to people issues appear to be further over the horizon than technology fixes. Community portals do have more to offer users of

government-citizen services, and citizen-citizen interactions than their technological novelty (see cover title page), but Civic portals in the UK are under-achieving on potential in 2005.

8.5 Chapter Summary

Chapter 8 presents key learning points as Lessons and Recommendations from the research exercise, and as such substantiates the contribution to knowledge. The overall contribution to knowledge of this research work is considered by addressing:

- issues of policy;
- the theoretical and methodological contribution, and,
- the overall contribution to the field of information systems.

Appendices

Appendix 1 Community Portal UK Survey 2002 Research Questionnaire

Appendix 2 Survey data for top 20 portal site responses to 2002 survey

Appendix 3 Poster – Community Portal Telematics

Appendix 4 Mini-Case Studies

Appendix 5 Table of Events, Interviews, Presentations, Publications

Appendix 1

Community Portal UK Survey 2002 Research Questionnaire

Community Portal/Community Networks Research Survey

A National Survey under the aegis of the Open University (OU) Research

This purpose of this survey is to research the state of development of Community Portals/Community Networks and their related technology in the support of communities of users. The following research questionnaire contains three sections A, B and C, asking for details of your involvement with use of communications technology for community portal related activities.
By Community Portal in this context we mean such use of technologies as web-page, email, etc., to disseminate local community information and services; typically using on-line databases with remote data-communications via telecommunication links or digital TV.
We are hoping to identify policy and practical initiatives aimed at assisting local businesses, and individuals, in a community, where telematic systems are in use for community development.

Please answer all questions that are relevant to your local usage of Community Portal technology by ticking the most appropriate coded answer box. Where written information is requested please use the space provided.

Your help in completing this questionnaire is gratefully appreciated.

All returns will be treated as strictly confidential, and the analysis abstract will be anonymised before release of any data obtained.

Section A: Current Position

A1 Have you implemented a community Portal?

Yes ☐ 01 No ☐ 02

If **Yes** could you proceed to answer **Section B**

A2 If you **do not** currently have a Community Portal are you planning to implement one?

Planning to implement in the next 6 months?	☐ 01
Planning to implement in the next 12 months?	☐ 02
Planning to implement later than 12 months?	☐ 03
Do not plan to implement a Community Portal	☐ 04
Other	☐ 05

General Portal Knowledge

A3 Do you know of any other Community Portal developments in your area? (please list below)

1 Name/URL
2 Name/URL
3 Name/URL
4 Name/URL
5 Name/URL

If you are able to answer **Section B** please continue. If not please return the questionnaire with only section A completed.

Are you willing to talk about any planned developments?

Yes ☐ 01 No ☐ 02

Section B: Business Issues/Drivers/Plan

Identification

B1 What is the name of your Community Portal development?

B2 What is the Uniform Resource Locator (URL) of your Community Portal?
e.g. www.mymanchester.net

Objectives and Network Development

B3 What is the nature of the organisation responsible for your Community Portal?

Local Authority	☐ 01
Private Enterprise	☐ 02
Charitable body	☐ 03
Voluntary sector	☐ 04
Other	☐ 05

B4 How long has your organisation been active in developing a Community Portal?

Under one year	☐ 01
One to two years	☐ 02
Three to five years	☐ 03
Over five years	☐ 04

B5 Please describe how the Community Portal initiative started.

Funded project	☐ 01
Small group of enthusiasts	☐ 02
Government initiative	☐ 03
Other, please state	☐ 04

Key Objectives

B6 From the following list please tick which is the most important reason for deploying your Community Portal?

Reason	
Distributing information more effectively	☐ 01
Encouraging community collaboration	☐ 02
Supporting voluntary sector groups	☐ 03
Economic regeneration	☐ 04
E-Business	☐ 05

If you have any other reasons for deploying (or considering the deployment of) a Community Portal, please indicate these below:

User Base and User Benefits

B7 How many users do you have?

	Currently	Ultimately
Up to 100	☐ 01	☐ 06
Up to 1,000	☐ 02	☐ 07
Up to 5,000	☐ 03	☐ 08
More than 5,000	☐ 04	☐ 09
Other	☐ 05	☐ 10

B8 Please state the primary target users? (please tick one group only)

Members of the public	☐ 01
Private sector employees	☐ 02
Specific interest groups	☐ 03
Public sector employees	☐ 04
Ethnic groups	☐ 05
Others (please state)	☐ 06

B9 Does your Community Portal serve a geographic community of users?

Yes ☐ 01 No ☐ 02

B10 If the answer to B9 above is yes, which of the following categories best describes the type of **geographic** community your portal is established to primarily serve?

Town	☐ 01
Inner City	☐ 02
Rural	☐ 03
other	☐ 04

B11 If the answer to B9 above is NO, indicate the type of 'community' your Portal Serves

Specific interest group	☐ 01
Cyber (virtual) community	☐ 02
Other	☐ 03

If other please state type

B12 List three key benefits ***to the user*** of your Community Portal?

Benefit 1.

Benefit 2.

Benefit 3.

If other benefits are evident please state:

Portal Development and Support

B13 What obstacles do you envisage, (or have experienced), to implementing your Portal development. Please tick all relevant boxes.

No major obstacle	☐ 01
Finance	☐ 02
No qualified internal personnel	☐ 03
Lack of political will	☐ 04
The present organisation of your group	☐ 05
Lack of a coordinating body	☐ 06
Other, please state	☐ 07

B14 Please describe the major on-line services available to users of this network.

		Which service appears to have sustained appeal? (please tick one only)	Please tick the **three** least used services?	Please tick the **three** most used services?	Please tick each service included in your portal
email	01	☐	☐	☐	☐
Internet access	02	☐	☐	☐	☐
Community information database	03	☐	☐	☐	☐
Other on-line databases	04	☐	☐	☐	☐
Forum/bulletin Boards	05	☐	☐	☐	☐
Video-conferencing	06	☐	☐	☐	☐
On-line transactions (e-commerce)	07	☐	☐	☐	☐
E-learning	08	☐	☐	☐	☐
Other Services (please list)	09	☐	☐	☐	☐

Other Services

B15 How do potential new users find out about your Community Portal?

Local newspaper advert	☐	01
Local radio station advert	☐	02
Promotional events	☐	03
Pamphlets and brochures	☐	04
Web search engines	☐	05
Other	☐	06

An important aspect of this research is to gain an understanding of the range of technical models for implementation of Community Portal solutions. A separate technical section ('Section C') is enclosed. If you are unable to complete Section C could you either ask a technical colleague to assist, or alternatively complete question B16 and include the information to enable separate enquiries to be undertaken.

B16 Is there a technical contact who could describe the structure of the portal?

Yes ☐ 01 No ☐ 02

If Yes (i.e. there is a technical contact) it would be very helpful if you would provide a contact name and telephone number (or e-mail address).

Name

Address

Telephone

e-mail

B17 Is technical support provided to users?

Yes ☐ 01 No ☐ 02

If Yes Please describe

B18 How are users trained to access and use the Community Portal network?
Please describe

Portal Access

B19 How do users typically access the network? Please tick all types

Personal Computer (PC) at home	☐	01
PC in Community Centre	☐	02
PC in Library	☐	03
PC in Workplace	☐	04
PC in School/College	☐	05
Public Access Kiosk	☐	06
Digital TV at home	☐	07
Mobile phone device	☐	08

B20 Who is responsible for producing and updating the content on your Portal?

Single person	☐	01
Small group centrally located	☐	02
Dispersed group from various organisations	☐	03
Other	☐	04

If other please state

B21 How frequently is the majority of the content updated? e.g. daily, weekly, monthly, etc

B22 Is there a methodology and system of version control in place.

Yes ☐ 01 No ☐ 02

If yes, please describe:

Return on Investment

B23 Is funding available to sustain the technical development and growth of your Community Portal

Yes ☐ 01 No ☐ 02

Please describe

If you are unable to proceed to complete the Technical enquiry Section C, thank you very much indeed for taking the time to fill in this questionnaire. An early reply would be appreciated. Following the analysis of the results we would be pleased to send an abstract of the outcomes and findings to you, if requested. Would you like me to send a copy of the outcomes to you?

Yes ☐ No ☐

We may like to follow up elements of the information that has been supplied to us.
Your cooperation in this would be much appreciated and it would assist if you could indicate your willingness to be contacted further.

Yes ☐ No ☐

Contact Name

Position

Telephone number

e-mail

Postal Address
Please return the completed questionnaire in the reply paid envelope to:
Mr Steve Musgrave
Orchard Cottage
Sarahs Fold
Stalmine
FY6 0LZ

Thank you for participating in this survey. All completed questionnaires that are returned will be entered into a prize draw for a bottle of champagne worth £25. The prize will be delivered to your address. (prize donated by Stone Computers - Staffordshire). Please tick here if you do not wish to be included in the prize draw ☐

Section C Technical

(Please omit this section if technical information is unavailable and return partially completed questionnaire)

C1 What systems are used in your Community Portal?

		If used please tick	Please name system/product
Software Databases e.g. Oracle, Access, etc.	01		
Knowledge Bases, e.g. Sagemaker Athena etc.	02		
Web Portal Solution e.g. Plumtree, Hummingbird, etc.	03		
Server Operating System e.g. NT Server, Novell Netware, Linux Redhat, etc.	04		
Hardware Single Server	05		
Clustered Server Farm	06		
Virtual Server	07		
Communications Internet Web based	08		
Virtual Private Network using telecom links e.g. ISDN, ADSL, etc.	09		
Hard wired topology from server	10		

C2 How do users access your Community Portal e.g. Web-site URL, Virtual Private Network (VPN) connection.
Please describe:

C3 Please describe distinctive features of user interface? e.g. navigation, colour scheme, etc.

C4 Please indicate schematically the structure of your Community Portal network

C5 Are there any unique features or properties to highlight that distinquish your portal against other Community Portals? e.g. Search facilities, etc.

C6 How do content writers publish and update content into allocated areas within your Portal? e.g. ftp, etc

C7 Are different content providers able to customise the look and feel of their allocated section/area?
Please describe

C8 What kinds of high speed or broadband network access services are available for users in your community? e.g. ISDN, ADSL.
Please list

C9 What technical improvements or innovations are you considering in the near future? e.g. better access for users through wireless links, or Interactive Digital Television. Please describe.

Community Portal Research

Sections D and E form the basis of further questions for use in a subsequent telephone interview with the respondent to probe additional areas of portal development.

Section D

D1 Who are the user groups (or individuals) you trying to reach?

D2 What are you hoping to achieve from implementation of your Community Portal? e.g. better local community information sharing, economic regeneration, etc.
Please describe

D3 Is economic re-generation a goal of your community network?

Yes ☐ 01 No ☐ 02 Don't know ☐ 99

D4 Does your organisation have, or plan to have a policy for Community Portal development as an aid to local economic development?

Yes currently ☐ 01 Yes, planned ☐ 02
No ☐ 03 Don't know ☐ 99

D5 Do you have any formal or informal collaborative arrangements with other organisations?

D6 Does your lead body have a 'Smart Community' vision, and associated actions plans, based on collaborative programmes that engage a cross-section of local citizens, businesses, academia, and government?

D7 Does your local authority provide access to the internet at the following types of venue? Please tick all types

PC in Community Centre	☐ 01
PC in Library	☐ 02
PC in School/College	☐ 03
Public Access Kiosk	☐ 04
Other	☐ 05

Personal Background:

E1 In what general field of work are you located? (e.g. local authority, voluntary sector, private business, library, community worker, or other).
Please state

E2 What is your current job title?

E3 What first interested you and therefore how did you become involved in Community Portal development? Please describe

View of own community network:

E4 What are the main goals of your community network? Please list

E5 Do you consider these goals and purposes to be similar or different from other Community Networks?
Similar ☐ Different ☐
If Different please list differentiating features

E6 What specific initiatives does your Community Network undertake to promote community development within the Portal features? i.e. how are you promoting or creating a sense of local community

E7 Can you give any Case Studies as examples to support your answer to Question E6?

E8 Do you think the Community Networking efforts are successful?
Yes ☐ No ☐
If Yes, in what respects do you consider them to be successful?

If No, in what respects do you consider them to be unsuccessful?

E9 What do you consider to be the main barriers that impede Community Networks from further helping to build local community?

E10 What do you see as being, in general terms, the future directions of Community Networks in the UK?

E11 Does the Community Network you are involved with provide any special services targeted to traditionally disadvantaged groups?
(e.g. Special training, loan of equipment, etc.)

E12 Do you plan to expand your network?

E13 What do you see as the technical, social and financial implications for gearing up to reach an even wider audience

E14 Do you have any recommendations for others who may be starting to build a Community Portal, or for peers facing the same sorts of challenges as you in running a community network?

Appendix 2

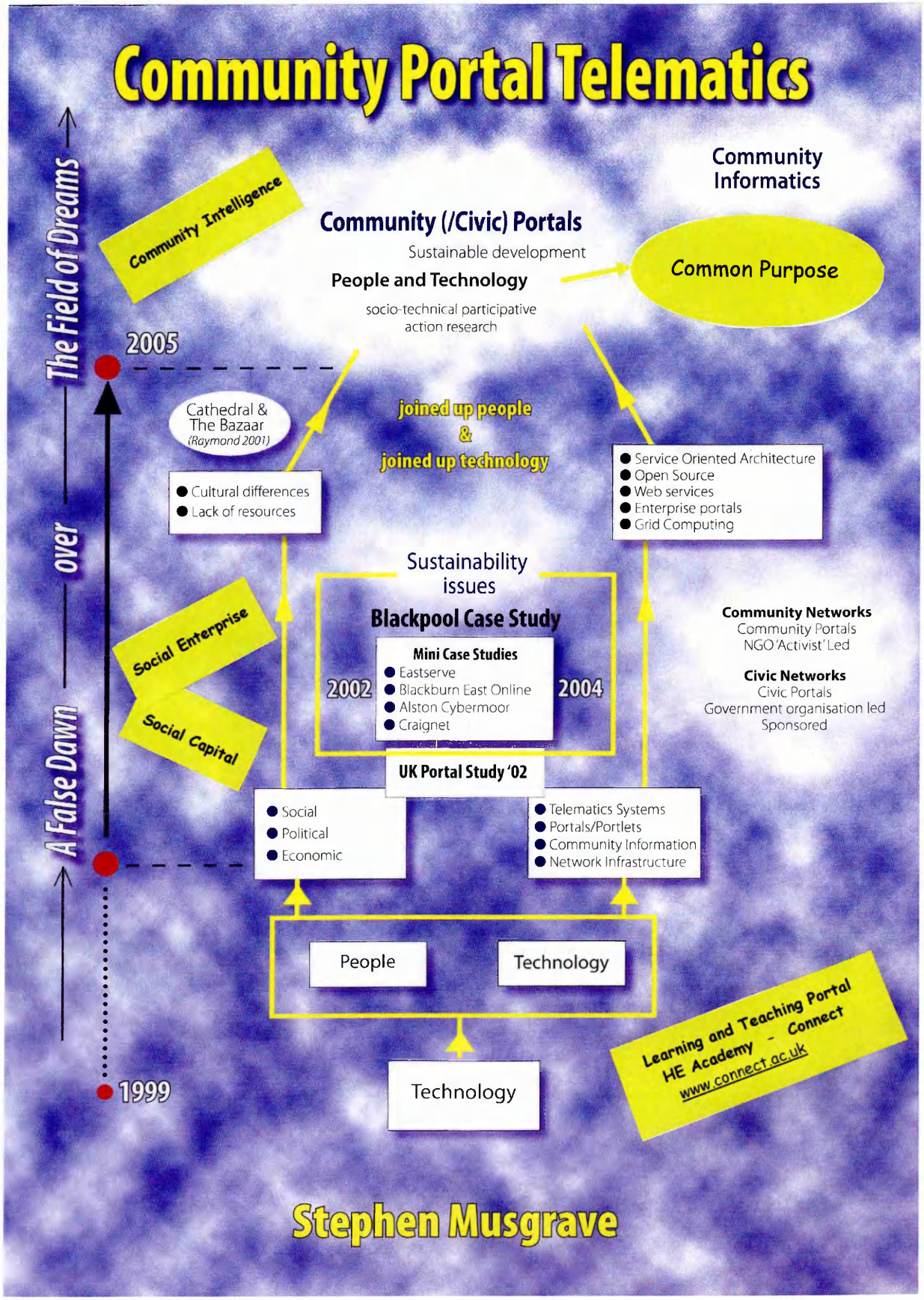
Survey data for Top 20 portal site responses to 2002 survey

Community Portal Analysis

Top 25 selection

			70	68	67	60	54	#	51	50	49	41	40	38	37	35	34	33	32	31	29	22	19	14	9	7	1
Portal			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Section A Current Position																											
A1 Have you implemented a Portal																											
Yes 01	1	20	1	1	1	1	0	0	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
No 02	2	5	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
A2 Planning to implement one																											
in next 6 months 01	1	3	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
in next 12 months 02	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
later than 12 months	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
not planning	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A3 Other Portal URL's																											
Willing to talk about planned developments																											
Yes 01	1	15	1	0	0	0	1	1	0	1	0	1	1	1	0	1	1	1	1	1	0	0	1	0	1	0	1
No 02	2	5	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Section B: Business Issues/ Drivers/Plan																											
B1 Name			col	wal	out	my	Ash	Stl	Pe	Bla	Thurro	The	Ne	Sul	Angus	Counc	go	Arun website									
B2 URL			ww	ww	ww	ww	ww	ww	ww	ww	www.th	ww	ww	ww	www.angus.g	ww	Arun.gov.uk										
B3 Nature of organisation																											
Local Authority 01	1	17	0	1	1	0	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0
Private Enterprise 02	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Charitable body 03	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Voluntary sector 04	4	4	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Other 05	5	6	1	0	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0
B4 How long in developing																											
Under one year 01	1	6	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0
One to two years 02	2	7	1	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0
Three to five years	3	10	0	1	0	1	0	0	1	0	1	0	0	0	1	1	0	1	1	0	1	0	1	0	0	0	0
Over five years 04	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
B5 How initiative started																											
Funded project 01	1	14	0	1	1	1	1	0	1	1	0	1	0	1	0	1	1	1	0	0	0	0	1	0	0	1	1
Small group enthusiasts 02	2	4	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0
Government initiative 03	3	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Other 04	4	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
B6 most important reason for deployment																											

Appendix 3 Poster - Community Portal Telematics



Appendix 4 Mini Case Studies

Civic and Civil portals for communication of local information and access to citizen services are illustrated by reference to the high scoring portal sites from the UK Survey in 2002 (findings in Chapter 5) the research survey 2002 findings reveal a gap between the citizen needs and the developers understanding of those needs.

The highest scoring site overall for portal functionality in 2002 was the national government portal UKOnline (now Directgov). Although untypical of the experience at local authority level a visit and interview was conducted to determine the approach to design and development of the overall service.

Four out of the top 20 high scoring local government sites from the UK Survey 2002 (Chapter 5, table 5.2) were used as mini-case studies for further investigation, through examination of the portal site on-line, and physical visit to the site to meet staff involved and discuss development issues. The sites chosen were selected as both a representative spread of the highest score, geographic separation, urban mix, and ease of access (i.e. travel distance). The sites were:

- CCIS / Craignet (Edinburgh)
- EastServe (Manchester)
- BlackburnWorld
- Manchester Community Information Network (MCIN)

A fifth site was added subsequent to the 2002 survey to represent a rural dimension for portal development. Attendance at a conference presentation led to a visit to:

- Alston Cybermoor (Cumbria)

CCIS / Craignet (Craigmillar Leith, Edinburgh)

The development of a community information service in a deprived area of Edinburgh in the Southeast of Scotland – the Craigmillar Community Information Service (CCIS), was initiated in 1994 to become a "leader and a beacon, not only in its immediate community of Craigmillar but elsewhere in the UK and Europe and internationally as well" (Gurstein, 2001), but by 2003 CCIS and the Craignet portal had closed due to withdrawal of funding.

The background and history of CCIS development is well documented (Slack, 2000, Gurstein 2000) and early analysts (Malina, 2002) chart the rise of the CCIS Teleport initiative.

In 2002 the Craigmillar community portal 'Craignet' (score of 18 out of 20 in UK Survey 2002 – table 5.3) was a high profile site. A personal visit to Craigmillar (Edinburgh) in February 2003 revealed an EU funded project with staff in place as developers, along with community champions. Promotional material existed *'Delivering Digital Opportunity'* (CCIS, 2000) and in 2002 Dr Andrew (Sandy) McDonald published a book *'VOICES: Encounters with the Emergent Community Digerati'* (CCIS, 2002) featuring vignette descriptions of citizen activities using the Craignet services . Sustainability became a problem for Craignet in late 2003 and issues of lack of political support existed (Malina & Ball, 2005).

Malina (2002) critically examined the concept of community networking and associations with civic usefulness, arguing that the term community is often associated with connotations of warmth and social cohesion, and can lead to unquestioning acceptance of civic worth when associated with community networks. In analysing empirical data on CCIS, Malina points out that while the local residential community were not prevented from using the system, in reality there was very little public support and no involvement from the residential community on the electronic forums provided by CCIS. The visit to Craigmillar by the author endorsed this view, finding that between 1994 – 2002 the professional aid community rather than local people were encouraged to use the system. Malina (2002) also points to problems in information sharing. Sponsors and developers highlighted the myth that real information was being shared, both in the real world and on the virtual forums operated by CCIS. The belief was that without motivation to share information openly, both off-line and on-line, no-one was likely to be empowered significantly by technology.

Although CCIS Craignet was re-designed during 2002-03 in an attempt to encourage local involvement from residents, funding was withdrawn and the CCIS system ceased to operate in 2003. This previously high profile portal development became unsustainable and effectively imploded, due to people and political differences.

EastServe (Manchester)

The mini case study of CCIS contrasts sharply with the fortunes of the EastServe (Manchester) portal that is located in a geographic neighbourhood in East Manchester (Northwest England, UK), (score 18 out of 20 in UK survey 2002 – table 5.3). Visits were undertaken in February, and March 2003 to both EastServe and ClicksandLinks in Manchester. In the EastServe development community ownership is an important difference and community content generation is sustained through Community Champions 'grown' through development and training undertaken in local IT centres (ODPM, 2003) http://www.odpm.gov.uk/index.asp?id=1140508 (accessed January, 2006).

A commercial company Clicks and Links (accessed January, 2006) have developed and also host the community portal, as well as providing a vendor developed simple content authoring tools. This enables citizens and citizen groups to publish content into allocated areas of the EastServe site and the site has considerable amounts of community information and local content. EastServe was nominated in 2005 for a Top Seven Intelligent Communities award from the World Teleport Association.

EastServe development is supported both by project fund income and financial grant from Manchester Metropolitan Council, and is currently (2006) financially sustainable.

BlackburnWorld

In benchmarking the development of portal services in Blackburn it is appropriate to understand the synergies and dissonances between

BlackburnWorld and the relationship to Blackburn East On-line (BEON), and local / central government cultural differences. As an early adopter of Information Age thinking – 'Blackburn with Darwen' as a unitary authority produced a strategy paper, in early 2000, titled "Active Knowledge" that set out clear and coherent vision and value statements for e-Commerce, e-Learning, e-Community, e-Governance, along with infrastructure issues. The goal was to develop the concept of "information literacy" and the gateway access point was a portal called Blackburn World (www.blackburnworld.com) (accessed Feb 06). This followed on from other regional portal sites developed under the UKWorlds branding, such as the MerseyWorld model (www.merseyworld.com) (accessed Feb 06).

The BlackburnWorld portal site contains community information, web-shop creation, web-site hosting, and other transactional interactive services. As an early to market portal site BlackburnWorld was innovative in 2000, but experienced problems was sustainability. Although funding streams enabled the early development and hosting of this portal, inadequate resources were in place behind the scenes to support and sustain content development or mediation of the community bulletin board services. Soon after the launch and early promotion and publicity the site lost its freshness and lapsed into a relatively moribund state. Integration into the Council services structure has brought fresh impetus to the development as the Council civic portal site. Conversely, Blackburn East on-line as a civil community portal site has content that is 2 years out of date and although it continues to exist as an internet site little development or content management is taking place.

Manchester Community Information Network (MCIN)

Manchester Community Information Network (MCIN) was an early adopter of portal technology and now host 16 non-government organisation supported portal sites (score of 18 out of 20 in UK Survey 2002 – table 5.3). Two visits to MCIN were undertaken in 2003 and 2004, finding deep linkage into the community, engaging citizens and actively involve them in the design and development of the portal services contained in the civil portals.

Cawood and Simpson (2000a) set the context for the MCIN development in their analysis of Information Society developments in Northwest England, and the wider framework of the Inter-Regional Information Society Initiative (IRISI). Formed in 1993 to develop electronic public information systems for the benefit of citizens of Manchester, MCIN became a limited Company in 1995, a registered charity in 1996 and now has a clear role in facilitating public access to on-line community information. Since 1999, MCIN has become a community development organisation that supports citizens to develop community portal sites across Greater Manchester. The close citizen engagement in each of its 16 community portal sites ensures buy-in from the community each portal supports, thus assisting sustainable funding through community endorsement and linkage.

Alston Cybermoor

A fifth mini-case study was undertaken to specifically include a rural community portal site. Although not prominent in 2002 as a high scoring

portal site, by 2004 this site had gained a significant national place in the community portal landscape. Alston Cybermoor (UK), www.cybermoor.org (accessed January 2006) is a community portal supporting a rural community dispersed over a large geographic area in a relatively remote area of Northwest England (UK). The Cybermoor portal team has been active in forging new links between the Civil portal and the Civic (Carlisle City) portal to grow capacity by wider community engagement. A visit to the town of Alston in April 2004, to meet the portal developers, found a sustainable funding model exists to support the growth in on-line information gathering and publishing (upward push) to benefit the wider community, and bi-directionally downward pull of information for individual citizens that may be currently unavailable. This wider communication of information encourages citizens to choose to use the portal services of both the Civic and Civil community presentation mediums. At the Ministerial Conference on eGovernment held in Manchester in December 2005, a presentation on the Connected Cumbria community network development highlighted the place and progress of the Alston Cybermoor portal in the evolving on-line portal development for Cumbria Council.

Directgov (formerly UKOnline)

This mini case study served as a benchmark against which other portals could be compared for functionality. The interview was undertaken by a visit to two eGovernment Unit officers (Alan Schofield and John Stephenson) at their London office. The dialogue provided background to the service development that had been achieved with UK Online. The interview was re-enforced by a

recorded conversation with Bill Edwards the Directgov Manager in the e-Envoy Office. This conversation (during a 1 to 1 discussion at the Kable conference Leeds in April 2003) updated the earlier commentary with information on the use of Intermediaries as franchise operation of services within the Directgov portal. An opportunity to interview Ian Watmore – Head of e-Government Unit in February 2005 iteratively updated the earlier understanding, giving insight into the model of proposed linkage from the national Directgov portal to Local Authority transactional and information services within a local government web-site.

The six mini-case studies complemented the two year longitudinal case study of Blackpool, giving further insight and understanding of issues affecting civic and civil portal development. Significantly, the mini-case studies illuminated the gap between civic and civil portal development. The Blackpool case study showed a gap between central and local government portal development and this second finding raises gap issues for further research.

Appendix 5

Events

This list of events and meetings attended is not exhaustive, and in particular is not reflective of the many meetings attended in Blackpool related to the longitudinal case study from 2000-2005.

20.02.02	Broadband Interactive Grid meeting with Telewest, held at University of Lancaster
26.02.02	Broadband Interactive Grid meeting Blackpool Town Hall with Bashir Timol (Telewest).
19.03.02	Clicks & Links Manchester Vin Sumner
23.04.02	Information GRID Edinburgh Prof. Tony Hey
2.05.02	OU MK Seamless UK Cathy Day
1.07.02	Pan-European Portal Conference Nottingham
27.11.02	Learning Lab Telford Workshop Prof. Steve Molyneux
28.11.02	CONNECT Foresight Centre Liverpool Colin Charlton + Prof. Terry Russell - 'Learning Place' + iDTV
17.12.02	Communitywise Workshop Blackpool Prof. Steve Molyneux
7.04.03	KableNet Seminar Leeds Building Quality Government Websites
9.06.03	Blackpool Masterplan vision seminar
11.11.03	WISES Workshop Blackpool Prof. Steve Molyneux
11.02.04	Granada Communitywise City Learning Centre Blackpool
20.10.04	Communitywise Think Tank
14.03.05	Kable GC North conference Manchester
23.11.05	EU Ministerial Conference Transforming Public Services

	Manchester

Interviews

6.03.01	Philip Baron Ass't Director eServices Blackpool Borough Council
11.10.01	Laurence Carradus Systems Developer Blackpool
5.12.01	Sarah Lay – The Goodwood (Northwest Leicestershire and South Derbyshire). Telephone interview Derby
7.12.01	James Byrne (Principal Business Analyst) Thurrock Community Information Network. Telephone interview.
14.12.01	Dr. Sandy McDonald Craigmillar Community Information Service (CCIS) Edinburgh – visit to Craignet
10.01.02	Rosemary Turner St. Helens community network - telephone interview
14.01.02	Alan Cavill – Manager – Blackpool Challenge Partnership
14.01.02	Eddie Collett - Leader Blackpool Borough Council eGov Champion
23.01.02	Ian Litton Warwickshire Web community network
24.01.02	Mark Harries Pembrokeshire public information point network – telephone interview
28.01.02	Manchester Community Informatics Network (MCIN) Gary Coppitch
13.02.02	UKOnline Alan Schofield + John Stephenson interview during visit to Stockley House, Victoria, London.

16.02.02	Matthew Sheppard Portal Developer BlackburnWorld
19.03.02	Vin Sumner Managing Director Clicks and Links Deansgate Manchester
21.03.02	Prof. Jack Hobbs + Dave Astley Telewest Preston
05.04.02	Michelle Campbell community activist EastServe Manchester
10.11.02	Philip Baron – eSystems Director Blackpool Borough Council
17.12.02	Prof. Steve Molyneux
16.02.03	Paul Gibbon House of Lords IT Office (Archivist)
7.04.03	Bill Edwards eEnvoy Office UKOnline/DirectGov
8.05.03	Chris Kendall – Planning Portal Bristol
9.06.03	John Bent – Developer – Blackpool Borough Council
21.07.03	Mavis Barlow – Community Champion Blackpool (Foxhall Ward).
14.03.04	Manchester Community Informatics Network (MCIN) Gary Coppitch arranged follow-up interview conducted at 'Kable GC North' - Manchester
16.04.04	Alston Cybermoor Daniel Heery Project Manager
20.7.04	Steve Weaver Chief Executive Blackpool Borough Council
22.7.04	John Rudkin eCommunity Development Manager Blackpool
8.02.05	Ian Watmore Head of e-Government (interviewed in House of Lords).

Presentations

7.11.01	OU MK Walton Hall with Ivan Horrocks, Geoff Einon, met Clem Herman Community Portals

7.05.02	OU MK Towards a Community Portal
12.06.03	Institutional Web Management Workshop University of Canterbury - The Community Portal
29.07.03	Illinois Summer School University of Lancaster A False Dawn over the Field of Dreams
30.09.04	Community Informatics Research Network (CIRN) conference Florence Italy *'Telematics in the context of Community Portals'*
6.12.04	Java Administration Special Interest Group (Ja-SIG) Winter conference New Orleans - A Portal Framework
2.06.05	OU MK Knowledge Media Institute Seminar Community Networks
16.06.05	Communities & Technology conference Milan. Civic/Civil Portal: the eConfluence Zone.
24.08.05	CIRN Conference CapeTown Community / Civic /Civil Portals
5.12.05	Ja-SIG Winter conference Austin Texas workshop presentation The Community Portal.

Publications

Dec '03	Telematics and Informatics: The community portal challenge – is there a technology barrier for local authorities?
Feb '05	Journal of Community Informatics A False Dawn Over the Field of Dreams
To be published April '06	Portals - book chapter title Community Portals (Civic portal / Civil portal),and the eConfluence Zone where bottom-up meets with top-down. (publisher CILIP).

Blackpool Case Study related meetings, etc

Note: This is a sample rather than an exhaustive list

12.12.02	Post Telford Communitywise group meeting (P. Baron office)
6.02.03	Communitywise partnership launch meeting
13.3.03	Meet eSystems group (P. Baron) and Lagan Frontline CRM (Bill White) re potential purchase of back-office integration software
15.05.03	VLE in Blackpool Education meeting
24.10.03	e-Community group City Learning Centre Blackpool
28.10.03	Lancashire Digital Development Agency Board meeting
8.12.03	e-Community group City Learning Centre Blackpool
23.02.04	e-Community group Blackpool, Fylde, and Wyre Society for the Blind
10.03.04	Blackpool Borough Council (BBC) and Granada Learning Partnership - Communitywise development project Board meeting City Learning Centre Blackpool
29.03.04	e-Community group Technology Management Centre Blackpool
14.04.04	Communitywise project group meeting
11.05.04	e-Community group Blackpool, Fylde, and Wyre Society for the Blind
19.05.04	Communitywise project group meeting
29.06.04	e-Community partnership Progress House Blackpool
7.09.04	e-Community partnership Claremont Community Centre Blackpool
7.12.04	e-Community partnership Palatine Library Blackpool
8.12.04	Communitywise project group meeting CLC Blackpool
15.03.05	e-Community partnership Blackpool, Fylde, and Wyre Society for the Blind
17.03.05	Creative use of technology in the community presentation City Learning Centre Blackpool

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